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SYMBOL: Electronic pruning knife—input noise, output signal.

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# DEMONSTRATION

I have been assured by a number of sincere, and honestly convinced individuals that all that is needed to establish the reality and gain full acceptance of psi phenomena is demonstration of actual, working psi phenomena. That all that is needed to have psi devices recognized and accepted by science is to demonstrate one that works. That, moreover, any psi device that produced useful results on a commercially applicable basis wouldn't need the recognition of science, since any man is willing to turn an honest dollar.

One of the major difficulties in establishing the reality of psi phenomena is the widespread acceptance of the validity of those beliefs. I'm preachin' this sermon to show that it ain't necessarily so.

Demonstration is *not* adequate; commercial practicability is not adequate—when the entity under dis-

cussion is socially anathematized, absolutely denied, and any individual backing the idea is subjected to powerful cultural pressure. That the culture does apply powerful pressures against anyone backing the idea can be shown; in order to achieve an objective evaluation of the phenomena of psi, it's necessary to evaluate the pressure-against-acceptance as well as the facts-in-favor-of-acceptance. How much evidence does it take to convince a bigot that his bigotry is mistaken? How much evidence does it take, how much logical argument, to overcome a rooted prejudice?

If it can be shown that bigotry and prejudice exist, then the fact that the evidence and argument have not been accepted must, itself, be re-evaluated. As of now, part of the argument against psi is the fact that "no one yet has ever demonstrated it satisfactorily." Before

using that argument as evidence, we need to examine what "satisfactorily" means—for, after all, no amount of evidence against a rooted prejudice is "satisfactory"; the only evidence "satisfactory" to a bigot is evidence in favor of his bigotry.

I am proposing that we analyze our own culture for *cultural* bigotry, which, if present, would have the effect of bringing enormous cultural pressure to bear against anyone who sought to demonstrate that which was anathematized.

The evidence:

1. Our Western culture is *the only* culture on Earth or in Earth's history that does not accept the existence of psi powers in one form or another. Then our culture is holding the position that "All the rest of the regiment is out of step; they're all fools incapable of observing and I alone can see straight." Well . . . could be, of course.

2. Western culture has rejected psi powers as part of reality for about two centuries or so. But is very, very, sure that they are impossible. The history of the preceding one hundred thousand years is all wrong.

3. Specific instances of psi powers have been demonstrated repeatedly during the last century, instances wherein individuals have been examined by top-rank objective scientists and scientific committees, and have been certified as valid by those examiners. In each case the scientists who were on the spot, and examined the situation, were said to be fools,

charlatans themselves, or deluded.

4. Specific instances of individuals having psi powers have existed, and persisted—during the present century—for decades. Individuals having psi powers which could be demonstrated at will, under fully controlled conditions, have appeared, and remained available for investigation, for decade after decade. In each instance, a few competent scientists have charged to the attack, examined carefully, been convinced beyond doubt . . . and the scientists themselves have then been subjected to massive and destructive rejection. Naturally, there's no point in a man throwing away his career as a scientist for no gain; the investigation of the psi-talented individual stopped.

The above statements can be checked in full. Not only does the culture reject the psi-talented individual, but it will powerfully and effectively punish his associates, backers, or even those who agree with him. No psi device, however practicable and workable, can be commercially successful, when the culture is so prejudiced as to put out of business any effort to make such a business successful! There are, for example, laws against fortune-telling. If you examine those laws, you'll discover that it is illegal to *correctly* forecast future events; the laws hold that truth is no defense.

When General Billy Mitchell defied the Navy on the matter of the ability of air attack to sink bat-

tleships, he was court-martialed. The fact that his statements were in every respect true was no defense against the charge of insubordination; legally, he had no right to tell the truth when he'd been told to shut up.

Equally, precognition is illegal; truth is no defense. The law tells the prophet to shut up; refusal to do so automatically makes him guilty of violating the law, whether he speaks truth or not. The law is, itself, then, prejudiced; it has prejudged that he *must* be guilty of fraud, and no amount of factual evidence could alter his guilt.

Then the law is expressing a cultural prejudice right there, is it not? If an accused fortune teller submits evidence that he foretold the future with perfect truth, the only part of the evidence the law can accept as relevant is that he foretold the future, and is thereby pleading "Guilty as charged."

Our culture has attained immense achievements, far in advance of any other the Earth has produced. True. But the culture is well aware that a technical scientist of immense achievement in, say, physics, is not necessarily the wisest possible source for judgments about legal affairs, or economics, or psychology. The fact that our culture has demonstrated immense and outstanding ability in technical physical sciences, by that same cultural reasoning, does not prove it is wisest of all possible cultures in all possible respects. Einstein found it advantageous to learn something from income tax experts; En-

rico Fermi respected the advice of legal experts. Claude Shannon invented Information Theory—but goes to a doctor when he wants information about medical problems.

But our culture knows that its successes in physical sciences proves beyond shadow of doubt that it knows more about everything possible than any other possible culture. Neither the fact that *every* other human culture, nor the fact that one hundred thousand years of history disagrees with its anti-psi convictions has the slightest influence. It's certainly showing many of the typical manifestations of the intransigent bigot.

In the middle of the last century, an individual by the name of David D. Home demonstrated repeatedly the possession of various psi powers. His abilities were investigated by a number of trained professional scientists; most prominent of these was Sir William Crooks, Britain's greatest experimental physicist, the inventor of the Crooks' Tube, and the man who established the nature of the cathode-ray beam as a stream of particles.

Crooks investigated Home carefully, and with all the highly trained experimental ability of one of the world's greatest experimental scientists. He reported that Home definitely did have the ability to overcome gravity; he could levitate. Home also had some other powers.

The results? Sir William Crooks was almost ruined, despite the fact  
(Continued on page 158)

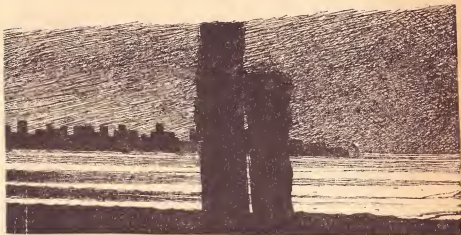


# THE DAWNING LIGHT

*First of Three Parts. There are reasons for robbing a bank other than simple desire for money—and reasons for smashing a culture other than simple destruction. But Nidor, in general, didn't know that . . . yet.*

BY ROBERT RANDALL

Illustrated by van Dangen





THE DAWNING LIGHT

There was just one elderly Peaceman guarding the bank that held the wealth of the Province of Dimay. In the cold, rainy drizzle of the Nidorian night, Kris peKym Yorgen paced the deck of his ship, frowning uneasily as he watched the black shadows of his men slipping up on the square-hewn brick building.

Kris peKym turned to the man at his side—a small, wiry Bronze Islander named Dran peDran Gormek. "Is the longboat ready?"

Dran peDran nodded.

"And the deests?"

Again the Bronze Islander nodded.

"Good," Kris said. "The bank's surrounded. We'll be in possession within three minutes, if all goes well." His voice was incisive: "All we have to do is cut down the one old guard and the Keeper—not much protection for millions of weights, is it?"

Dran peDran shook his head. "They isn't expecting any robberies, captain. You doesn't guard against something you doesn't expect."

Kris smiled. The little outlander's bizarre inflection always amused him—besides, there was truth in what he said. Nidor's banks were four thousand years old—and in four thousand years, no bank had ever been robbed. The idea would have been preposterous, once; Nidor's carefully-balanced economy had seen to it that everyone had at least enough for himself, anyway.

Kris' lips curled in a lopsided grin. "There's always a first time,

Dran peDran. There was a first time when the Earthmen came, when they first built their School and first started spreading lies and blasphemy among us. And there'll be a first time for robbing the Bank of Dimay." He squinted into the rainy darkness, then said, "Shove off and get into that longboat. They're ready to enter the bank."

"Right, captain."

Dran peDran sprang over the side of the deckrail into the waiting longboat below, and there was the sound of oars creaking as he moved off toward the dock. Kris peKym continued to pace the deck anxiously. *First mission for the Party*, he thought. *It has to be perfect.*

He fidgeted impatiently, watching the dim silhouette of the Peaceman strolling placidly back and forth before the bank. The Peaceman was going to be surprised, Kris thought with a grim smile. His family had probably held that sinecure for four thousand years in unbroken succession.

No . . . no one had ever robbed a bank before . . . but it had to be done now. Robbing the bank would drive a wedge between the people and the Earthmen, would leave the Council of Elders in an awkward spot—would, in short, put Nidor one step closer to a return to the old ways.

It was a paradox, thought Kris: in order to return to the old ways, it was necessary to do startlingly new things, like—he chuckled softly—robbing the bank. But the world

had changed, in the past century, and further change was needed to return it to the Way of the Ancestors.

He watched as a dark figure edged up quietly behind the unsuspecting Peaceman. Dimly seen behind him were the other crewmen who had gone ashore to make the assault on the bank.

*Now, Kris thought. Now—hit him!*

Kris saw an arm go up, saw the black bulk of a club hover in the air for a moment—and then, traveling quickly and clearly across the water, there came the sound of the club striking the Peaceman's skull. He watched the shadowy form sag to its knees, and saw two other shadows appear out of the fog and truss the man thoroughly. So far, so good. The Peaceman would never know what hit him.

Nor would the Keeper of the bank. Kris smiled as he remembered the man—he had met him three days before, while he and Dran had been making preliminary investigations while ostensibly changing some large coins. The Keeper was a short, rotund man of the Clan Sesom, whose golden body hair had turned nearly silver; he was very fat, and waddled ludicrously around within his bank.

Straining his ears, Kris thought he heard a grunt from within the bank. *So much for the Keeper*, he thought.

His men, trained minutely for the job, were carrying the robbery off

as if they were so many puppets. Only—

Yes, there it was. The faint clatter of doubly-cleft deest-hoofs, behind the bank. Three of his men were there, mounted. At the signal that the bank was taken, they were to ride up the marshy back road toward Holy Gelusar for a few miles—far enough for them to take the main-road turn-off, come back, and repeat the whole thing all over again. By the time they had made ten or twelve round trips, it would appear as if a good-sized party of marauders had come down from Gelusar to clean out the bank.

Meantime, the real unloading was proceeding. Kris watched approvingly as the ten men who had entered the vault formed themselves into a human chain stretching from the unseen interior of the bank to the dock that led from the bank to the waters of Tammulcor Bay. And then, the cobalt began to move.

It traveled arm-to-arm down the row of men, each heavy loop of coins passing from one to the next, until it reached the dock. The last man was bending and handing the coins through the hole that had been prepared—I *hope those sons of deests didn't hurt those planks*, Kris swore; *I want them to look as good as new when we're done*—and into the longboat that waited under the docks, ready to scuttle through the water under cover of darkness to the *Krand*.

After about fifteen minutes of loading, the chain dispersed. That

told Kris that the longboat was full, and that the men were going back to take a breather while the boat was rowed to the *Krand*. Tensely, he listened as the oars creaked in the night, held his breath as the longboat approached.

Then Dran peDran was up on the deck again, looking sweaty and overheated. "We is got the first load, captain!"

"Fine work," Kris said. "Get it below and go back for more."

"Is going, captain."

"Good."

He watched as the perspiring crewmen swung the loops of cobalt out of the longboat and onto the deck, where other crewmen grabbed the coins and carried them below to stow them in the false bottom of the *Krand*. Then the longboat slid silently away in the night, heading back under the dock to receive the next load of coins.

It was long, hard, slow, sweaty work, and it took most of the night. But no one bothered them. Who would be out, late at night, down at the treacherous waterfront? And who would expect the bank to be robbed, anyway? Such things just didn't happen.

*At least they never used to*, Kris thought pleasantly.

It was close to morning by the time they were finished and all the money was aboard the *Krand*. The bank had been thoroughly robbed, and the money was safely stowed in the ship's false bottom.

*The bank had been robbed.* Strange words, Kris thought—words that never would have been conceived, had the Earthmen never come. But the Earthmen *had* come. It was not yet a hundred years since they had dropped from the skies, claiming to have come from the Great Light Himself. In not a hundred years, Kris thought, the balance of a world had been destroyed.

It was no exaggeration to say that tradition had been demolished and Nidor turned topsy-turvy since the coming of the Earthmen. The Elder Priests of Nidor's Sixteen Clans had accepted them as emissaries from Heaven, had greeted them enthusiastically—and thereby, Kris thought bitterly, had paved the way for their own downfall. Today, the knife and the rifle ruled in a world that had known peace for thousands upon thousands of years—and it was the fault of the Earthmen.

And now, the *Krand* lay innocently at anchor in Tammulcor Bay, its valuable cargo far from sight; it was simply another merchantship resting between voyages.

Kris stood for a while on the deck, while the men went below. After a few moments, Dran approached hesitantly.

"We is done it, captain!"

Kris nodded. "Yes, Dran. 'We is done it.'" He paused. "There's no trace of the money?"

"They's never finding it," the Bronze Islander said. "Not without they takes the ship apart."

"Good," Kris said. He stared out over the rain-swept bay at the city sprawling on the mainland. "There will be fuss and fury in Tammulcor tomorrow," he said wryly. "We'll be able to hear the weeping and wailing from here, when they find out their money's not worth anything any more!"

Dran peDran laughed merrily. "This is good, captain! We is successful!"

"I hope so," Kris said. Somehow, he found it hard to muster the enthusiasm of his little First Officer, despite the smoothness with which the bank robbery had been carried out. Only time would tell whether they would be successful in their ultimate goal—the restoration of Nidor. Only time would reveal whether or not the Way of the Ancestors could be attained once again.

*Earthmen!* Kris thought fiercely and spat into the water of the Bay. *Devils!*

Two weeks before, Kris had been in the eastern seaport of Vashcor, sitting in the office of the Secretary of the Merchants' Party, Norvis peKrin Dmorno, in the Party building—a small stone structure overlooking the sea.

From outside, the raucous cries of the fishmongers and the deep, melodious chanting of sailors killing time on the dock came drifting in, helping to build up a deceptive mood of security—deceptive because

there *was* no security to be had on Nidor any longer.

On the walls around the office were posters which showed the intense, brooding face of Party Leader Del peFenn Vyless as reproduced in the blotchy pastels of a cheapjack printer. The Leader was off on a journey to the disturbed area around Elvisen, investigating conditions among the noisy bunch of discontented, landless ex-farmers clustered in the lowlands there. Kris was glad Del peFenn was elsewhere; he didn't mind dealing with Norvis and the others, but both Kris and Del were strong men and there was inevitably conflict between them—with Del, as the senior member of the organization, invariably coming out ahead.

In the office were two others beside Secretary Norvis. Young Ganz, Del's son, was still a boy, and yet more than a boy, actually a chunky youth with powerful arms and much of Party Leader Del's solid-hewn appearance. His eyes had the same piercing quality as the old sea captain's, and when he spoke his voice was a not dissimilar basso. Unlike his father, he had the quality of keeping his mouth shut when he had nothing to say—but he shared his father's strong anti-priesthood views completely.

Del's daughter, Marja geDel, was, in a way, more like her father than Ganz was. She had the same fiery spirit, the ability to speak her views as she saw them and—something Del peFenn didn't have—a lush,

shimmering beauty about her. Her eyes were deep and wide; the light down that covered her body was a pale, lustrous yellow. She bore herself with Del's erect dignity, but in a feminine way that was oddly pleasing.

At the head of the table sat Norvis peKrin Dmorno, the Secretary of the Party.

Norvis was a quiet man; he seldom said anything except to pass on the orders from Del peFenn. But when he did have something to say, it was important.

He was neither young nor old; he was approaching forty, but the downy hair on his face was still as golden as that of a youth's, and the lines in his face were those of experience, not age. He had been a sea captain, and a good one. Kris could remember when, as a ten-year-old midshipman aboard the *Krand*, he had watched Captain Norvis peKrin give his orders in a quiet, firm voice, commanding obedience but never forcing it. It sometimes seemed odd to Kris that, at that time, Norvis had been little older than he, Kris, was now.

Norvis folded his hands on the table and said: "Here's the position: we—the Party—have been losing ground steadily for nine years. A full cycle ago, we didn't exist. That means that less than five of our fourteen years of life have actually been productive. During the Great Depression our rolls boomed; today, they're less than—"

Ganz peDel said, "Pardon, Secretary Norvis, but I'm confused. This is the first time I've been at a meeting of the Leader's Advisors, and—"

Norvis's face didn't change. "What troubles you, Ganz peDel?"

"Well, our father . . . uh . . . our Leader del peFenn—has told Marja and me something about the Great Depression, but I'm ashamed to say that I never understood it too well. How could *too much* food cause starvation, anyway?"

Marja geDel's smile widened as she turned to Norvis. "Father is a very emotional man; his ideas make sense, but his explanations are sometimes a little limping."

"I understand," Norvis said. "I'll try to explain." He breathed deeply—almost sighing—and looked at the soft golden fuzz on the back of his hands. "Twenty years ago, a hormone was invented by a student at the Bel-rogas School." It was the school that had been established by the Earthmen, nearly a hundred years before. "This hormone was supposed to be a great thing; it was supposed to double the per-acre yield of the psych-bean. The hormone was distributed all over Nidor. And it worked, just as the Earthmen knew it would; twice as many psych-beans were grown that year. We had more of our main crop than we could handle. Everything became worthless—clothes, made from the fiber; paper, made from the pulp; and worst of all, food—made from the fruit of the plant itself.

"The farmers had more than they could eat, but they couldn't sell it—so it never got to the cities. And the big cities starved because no one would bring them a worthless product."

"I see," Ganz said. "And my father—Del peFenn—brought us out of it."

Norvis nodded. "He organized the Merchants' Party and forced the Council of Elders to change its ways. The food was given away to those who needed it. The rest was plowed back into the ground as fertilizer. But until the Party stabilized things, Nidor was in terrible shape. Am I right, Kris?"

Kris nodded grimly without saying anything.

"Again the Earthmen," Ganz said vindictively. "They've plundered and disturbed Nidor for six cycles—but they've done it through our priesthood. It's the priests who have sold us out to the devils!"

"Easy, Ganz," Norvis said calmly.

Kris frowned. He didn't like such ranting against the priesthood. That was the trouble with Leader Del; he had a habit of alienating the people by preaching against the Elders—and young Ganz was following in his father's steps.

"Just a minute," Norvis said, patting the air with a hand, "we're here to decide on new policy, not to vent our spleens against the Earthmen. If we have anything to say, let's make it constructive."

"Very well then," Marja said, "what's our problem?"

Norvis looked at each of them in turn. "Simply, this: we're in a rut because we haven't had an emergency. During times of trouble, people flock to the Party. When things are relatively easy, we lose members. If we're going to force the Council to return to the Way of the Ancestors, we'll have to have numbers. Therefore—"

"Therefore," Kris said, "we manufacture an emergency."

"Exactly—but how?"

Marja smiled wryly. "We've been going around the same point for weeks, now. We're stuck in a circle."

Norvis cradled his forehead in his hand. "I know. And we're not getting closer to a solution." He lifted his head. "What can we do? Use the hormone? No farmer would touch it. Start another hugl plague, as the Earthmen did sixty-odd years ago? There aren't any hugl left, to speak of." He shook his head. "No. Anything I think of is impractical, anyway, we need money to carry them out."

Marja brightened suddenly. "Money? Then why not get it directly?"

"Directly?"

"Of course! Let's go to a bank and take it!"

To Kris, who had been listening passively, the suggestion came as a jolt. Rob a bank? Unheard-of! But still—

Norvis was nodding. "I like it. By the Great Light, I like it!" He smiled. "Marja, your father would



be proud of you! Let's work this out, here and now."

Kris leaned forward excitedly. "Who's going to do it?"

Marja turned to him, an odd light in her eyes. "I'd say *you're* the best choice," she said. "You've got the ability."

Kris smiled. He'd been thinking along the same lines himself. The job called for a strong man—and if he didn't do it, Del would. "You're right!"

"O.K.," said Norvis. "Ganz, you and Marja go out and find me half-a-dozen of the best ship's carpenters in Vashcor. I'll talk to Kris."

"Carpenters? What for?" Ganz said.

"We'll have to make some changes in the *Krand*," said Norvis. His eyes glittered animatedly. "We'll have to build some sort of secret place, to hide all that money!"

After Marja and Ganz left, Norvis turned to Kris. "It's a tremendous responsibility, Kris peKym." He smiled as if to take the curse off that weighty statement. "I'm sure you can handle it, though."

"I'll do my best," Kris said.

"You'll go to Tammulcor and take the Bank of Dimay. Remember, though, that that territory is dangerous. We've got Vashcor, here, and the Bronze Islands pretty well under control. Sailors are notoriously lax in their religious discipline, anyway—as you well know."

Kris grinned. "I know." As a

member of the Clan Yorgen, he could trace his ancestry back to the Great Lawyer, Bel-rogas Yorgen himself—as could a few hundred thousand other Nidorians. Some Yorgens regarded themselves as especially important for this reason—but a few years at sea had robbed Kris peKym of that particular delusion.

"But farmers," Norvis continued, "are different. A farmer depends on his land; he knows that the agriculture of his ancestors was good enough to support a family, and he knows it will support him. The farmer is a simple man; he knows what he needs and he knows how to get it. His life is stable, and that's the way he likes it. Follow?"

Kris nodded. "If a farmer's life becomes unstable because of innovations, the first thing he'll do is scrap the innovations and go back to the old way of doing things. It's almost automatic. The farmer is simple in his outlook."

"Simple, yes," Norvis agreed. "He isn't stupid, though." He stood up, facing Kris, who towered over him by a full head, and stared at the younger man for a long moment.

"Let me tell you a secret," said Norvis. "You were only a child when the Great Depression hit Nidor. You know who caused that depression?"

"The Earthmen and the Elders," Kris said as if repeating a lesson.

Norvis shook his head. "No," he said. "I did. Del peFenn and myself caused that depression."

"*You?*"

Kris felt as though he had been stung. His parents had been sturdy Pelvash farmers who had tended their crops with care and husbanded them with diligence. In the year of the double crop, they had been murdered by a band of hungry, marauding scum from the cities. Eight years old, alone and friendless, the orphaned son of old Kym peThad Yorgen had made his way to Vashcor, to the sea—the only way a young boy could live.

He had signed eight-year papers and been assigned by the Seamen's Guild to the ship of Captain Norvis peKrin Dmorno.

Norvis had come to be almost a father to Kris, teaching him to read and write, filling him with hatred

for the Earthmen who were destroying Nidor.

To find that Norvis was partly responsible for the devastation that had caused the Great Depression was a distinct shock to Kris peKym's nervous system.

"*You* were responsible? How?"

"We distributed the hormone to every farmer on Nidor—and so we caused the Collapse." For a moment, a flicker of some unreadable emotion crossed the Secretary's face.

"Why?" Kris asked. "Why did you—"

"Why? It's a complicated story, Kris. Let's just say the Earthmen badly fooled us all. But we managed to cover it up and do our best to straighten things out again."

Kris felt a great flood of relief.



How typical of Norvis! Simply because he had been duped by the Earthmen, he was willing to shoulder the responsibility for the whole collapse of the economy.

He smiled at the Secretary. "Well, you *did* straighten things out again."

"Yes—and we took credit for it. But it was the farmer who did the right thing. It was the farmer who saw that the thing to do was to go back to the old way, to quit using the hormone. Of course, we were the ones who told them to plow their rotting crops back into the ground, but the vast majority had already made up their minds to go back to the old way. And the Council of Elders had to go along."

"I follow," Kris said. "With the farmers still persuaded that the Council of Elders knew what it was doing, too. They don't think too clearly, do they?"

"That's not the problem. The thing the farmers cannot seem to see is that our Council of Elders is being misled by the Earthmen. If we don't wake them up, Nidor will be in ruins before another century passes."

Kris' eyes widened. "*This* ought to stir them up. Great Light, what an idea! Robbing a bank! It's unheard-of!"

Norvis smiled. "Exactly. Marja hit on a tremendous idea. And that's why it'll work."

"We can certainly use the money," Kris said thoughtfully.

"True—but we'll have to use it sparingly. Too much of it dumped

on the market at once will cause a panic."

"So? That's just what we need: panic."

"Not that kind. It's—"

Kris looked exasperated. "Look here, stealing the money will cause a panic. Unloading it will cause another. That's what we're looking for—dissatisfaction, unrest, anything to agitate the people against the Earthmen. You've been telling me that ever since I was eight years old."

"Well, yes, of course. But we have to make sure what *kind* of panic. We have to remember what forces are in play." Norvis put his hands together. "The Unit Cobalt Weight is the money of exchange of all Nidor. It has been for four thousand years. For almost as long, the greatest percentage of the actual coin has been kept in the five banks of Nidor—one bank in each province. It was realized pretty early that a certified piece of paper was just as good as the coin, and, if lost, at least we'd still have the metal. Now what happens if a bank loses most of its metal?"

Kris put his hands on the desk and leaned toward Norvis peKrin Dmorno. "I don't have to be lectured to as though I were a child! Come off it, Norvis! Why not a second panic? The first will be nullified as soon as the Council in Gelusar authorizes the amount lost to be coined from the bullion reserves. Why not another panic?"

Norvis shook his head. "I don't

think so. We'd lose more than we'd gain. Take a look at it; think it through. What will happen in Dimay if we're successful?"

Kris peKym's brows drew together in thought. "Well, bank notes will be worthless—for a while, at least. Then the Council will authorize more coinage, as they always do to make up for coins lost."

"You really think so?"

"Let me finish. These coins *aren't* lost. If we dump all that metal back on the market, the cobalt itself won't be worth as much; we won't have gained anything. We'll have to feed it back into circulation slowly enough to allow the Council to take up the slack by recalling the excess."

"Exactly," Norvis said. "Now, as soon as the *Krand* has been rebuilt, you're ready to go."

"How about a crew?"

"That's your job," said Norvis. He smiled a little. "You're a better leader than I am, Kris peKym—did you know that?"

"I think I am," Kris agreed without conceit. "You're more of a plotter, Norvis peKrin. You can think up beautifully nasty schemes—but you don't know how to handle men."

"Precisely," said Norvis dryly. "That's why Del peFenn Vyless is the leader; I know my limitations. But enough of that. We have to move quickly."

He took Kris peKym's hand. "Good luck, Kris. May the Great Light bring success."

Just offshore, two days after the robbery, the schooner *Krand* floated peacefully at anchor in the harbor of Tammulcor. Kris peKym seated himself comfortably in a chair in his cabin and folded his arms across his broad chest.

He looked at his First Officer, who squatted cross-legged on the floor, and his face broke into a broad grin.

"You don't look worried, Dran peDran."

"I isn't," said the little Bronze Islander. "What does I has to worry about?"

"Well, we've got eight million weights in cobalt in the hold of this ship," Kris said nonchalantly. "If the citizens or the Peacemen of the Province of Dimay ever find out where it is, you and I will be hanging from the bowsprit, waiting for the sea lizards to swoop down and pick our corpses."

"Captain," Dran said, "if you is trying to sicken me, you is not succeeding. As long as you has your life, I is not worried about mine."

Kris laughed. "We've got them in an uproar, that's for sure. No one seems to be able to figure out who stole it or why, or where it went."

"They's got priests on the job now, though," Dran said. "I sees five of them around the bank this afternoon."

"What can they find? Nothing, Dran, nothing." *At least*, he thought, *I hope they can't*. He enjoyed poking

small jibes at his First Officer, but there was a great deal of truth in what the little man said.

"We is been here two days, captain," Dran said. "I is getting nervous."

"If we'd sailed the day after the robbery," Kris pointed out, "we'd have been first on the list of suspects. As it is, we've got our honest cargo almost loaded, and the longshoremen have been over every inch of the ship. They'll know—"

He stopped. A voice had sounded over the waters of the Bay of Tamulcor.

"Hoy!" came a faint voice from above. "You— Aboard the *Krand*! Hoy!"

Kris peKym cocked his head to one side and listened.

"Hoy, dockboat!" he heard the lookout shout. "What is it?"

"We're special searchers for the Uncle of Public Peace," came the reply. "We'll see your captain!"

Dran shot to his feet. "By my Ancestors!"

Kris lifted his tall, muscular body from the chair, moving like a cat stalking its prey. "Relax, Dran peDran; I can handle this."

He climbed up the ladder to the deck. The torches on the masts shed a flickering orange light over the water, and from above the pale glow of the Lesser Light shining through the eternal clouds gave a ghostly monochromatic background to the circle of orange.

Kris walked over to the port bulwark and looked over the side. A

dinghy with five men in it was pulling up to the ladder.

"I'm captain here," Kris told them. "What's your business?"

"Special searchers for the Uncle of Public Peace," the leader repeated.

Kris frowned. "Looking for what?" he asked sharply. "We have no criminals aboard."

"That's to be seen," the Peaceman said. "We're not looking for men anyway; we're looking for cobalt."

"For what? Now, look here—I've paid my harbor fee."

"We'll take none that's legally yours. Let us aboard."

Kris shrugged and signaled the deckman. "Lower the ladder."

As the five Peacemen came aboard, Kris just stood there, his balled fists on his hips, looking at them coldly. Several crewmen stood about, fingering handy belaying pins. The crew of the *Krand* was a tight, cohesive unit that stood firmly behind Kris.

"You're Captain Kris peKym Yorgen?" the official asked. "Commanding the *Krand*, out of Vashcor?"

"I am," Kris said coldly. "And now that you're aboard my vessel, you'd better prove you are who you say—or the sea-things will eat tonight."

It was the right thing to say, Kris knew. The other sea captains would be equally suspicious of anyone who came aboard their vessels. In the first place, Peacemen had no right to interfere in honest trade; in the

second place, these might not be Peacemen in the first place.

The mob violence which had threatened Tammulcor and all of the Province of Dimay in the past two days made one suspicious of anyone and everyone.

The Peacemen fingered the heavy truncheons at their belts while their leader took a neatly-folded paper from his sash pouch. He handed it to Kris, who opened it and read the order from the Uncle of Public Peace.

He smiled and looked up. "Stolen cobalt, eh? What happened?" His voice was no longer truculent, and hands dropped from truncheons.

"Hadn't you heard that the Bank of Dimay was robbed?" the leader asked.

The words echoed oddly over the water.

"I had heard, yes," Kris said casually. "But not the details."

"One hundred manweights of cobalt were taken. A group of men struck the Keeper of the bank and took the money away." Kris saw the man glare at him sharply. "It was a most evil sin, and most incomprehensible."

Kris nodded. "True. What would anyone want with so much money? And why do you come to me?"

"The money must have been taken away somehow. It may be aboard a ship. We have to search every ship that comes into the harbor. You see that we—"

"I see," Kris said. He turned to his First Officer. "Dran peDran,

show these men through the ship. Eight million weights of cobalt coin could not be hidden easily."

*No indeed, Kris was thinking. It's hard to hide thirty-six cubic feet of metal. Especially when it's in the form of coin.*

While Dran led the police below, Kris climbed to the bridge and leaned against the mainmast, watching the shore. The seconds passed slowly, and he found himself listening keenly to the sounds of the harbor—the creaking of a distant oar, the soft, unvarying lapping of the waves against the side of the ship, the sounds of men chanting far away on the shore or on some hauling-vessel entering the harbor.

The next few minutes would mean the success or failure of the voyage, Kris thought. And a failure here, at this time, might mean the failure of the whole Merchants' Party.

Kris smiled grimly. He'd staked his life with the Merchants—with Leader Del peFenn and with Secretary Norvis. It just wouldn't do to have the whole thing blow up in their faces right now, with Nidor still in the grip of the misguided Elders and the devil Earthmen hovering ambiguously in the background.

And now Captain Kris peKym stood on the deck of his ship, waiting for success—or failure. If the police found the secret of the double hull—in the bilge of the ship, the whole project would collapse right there. It would do no good in the long run to kill the five investigators

—though that would have to be done, of course. But the Uncle of Public Peace would know what had happened, and, within a day, Kris peKym Yorgen and his crew would be hunted men.

He waited patiently. There was no noise from below as yet. His men would come down on the hapless five with belaying pins just as soon as the fatal discovery was made—if it was made, that is. He steeled himself and waited for the outcome.

It took a while before the constables reappeared. They were trained searchers, and they had done a thorough job, having searched through the vessel for nearly three hours. When they came above, though, it was immediately apparent to Kris that they had been unsuccessful in their search.

He smiled to himself. Obviously, they didn't even as much as suspect the existence of a false hold in the bottom of the ship. After all, a ship is only built one way; the thought that anyone might break time-honored tradition would never enter into their heads.

The leader of the squad seemed a great deal more at ease than he had been when he had boarded the ship. "Well?" Kris asked. "Find the untold millions below?"

"I'm glad to say your ship's in fine order, captain. Not a trace of contraband of any sort. But still—"

"Yes?" Kris asked suspiciously.

"It's very odd, you know. A hundred manweights of cobalt is no

easy load; how could it disappear like that? It's like magic."

Kris looked thoughtfully at the top of the mizzenmast. "Yes. You're right. It's almost as though the stuff had floated off into thin air—as the Earthmen do, when they leave us."

A startled expression crossed the constable's face. "You aren't suggesting—"

"Oh, no!" Kris said, his face taking on an expression of horror. "Great Light forbid! No! But, as you said, it looks like magic."

The officer scowled. "Little help that is. Well, that'll be all. Good sailing, Captain Kris peKym."

Without another word, he and his men climbed down to the dinghy and rowed off. Kris barely managed to repress the urge to chuckle uproariously as their oars swept busily through the water.

When they were a good distance from the ship, Kris breathed deeply and turned around to Dran peDran.

"All right, let's turn in. We have to take sail tomorrow—and we have to look like honest sailors, don't we?"

Then he noticed the peculiarly solemn look on the First Officer's face.

"What's the matter, Dran peDran?"

The little Bronze Islander glanced apprehensively at the Public Peace dinghy that was moving smoothly away, some hundred yards from the ship. "We is got somewhat of trouble, captain. Come below, eh?"

Kris followed Dran down the ladder to the First Officer's cabin. There, he saw two burly sailors standing guard over a third seaman. The prisoner looked dazed.

"We has to clout him on the head when we find what he is up to, captain. Look at this." He handed Kris a bit of paper.

Kris took in the words scribbled on it at a quick glance:

*The money is in a false bottom built into the ship. I had nothing to do with the robbery. Ask the Grandfathers to pray for me.*

It was signed, *Vels peKorvin Danoy.*

"He is trying to give it to the Peaceman when I catch him," said Dran peDran.

Kris frowned. "Did you write this, Vels peKorvin?"

"Sure he write it!" Dran snarled. "I signal the boys when I see him, and they clout him and take him here! We tell the Peacemen that he is seasick," he added as an afterthought.

"Quiet, Dran," Kris said softly. "Let *him* talk. Did you write this, Vels peKorvin?"

The prisoner looked up stiffly. "I wrote it, captain. To steal money from a bank is nothing but sacrilege. It is a sin which I do not want on my soul."

"Why didn't you just denounce us?" Kris asked. His voice was still soft.

"It would have done no good," Vels said bitterly. "You would have killed us all. But if they got the

note, they could have done something about it later, after they got ashore."

"Then you admit your guilt? You admit you have endangered the life of those aboard this vessel?" Kris crossed his arms sternly. "There is only one sentence for that, Vels peKorvin Danoy."

"I know. But I did what I thought was right."

"Very well." Kris turned to Dran. "Prepare a Cup of Eternal Quiet."

The little First Officer registered astonishment. "What, captain? The drug is only for those who is too badly hurt to live, or for those who is dying of an evil growth! Traitors is hanged!"

"Quiet!" Kris said sharply. "Hanging is for criminals; stoning is for blasphemers. Vels peKorvin is neither. He has done what he thought was right. If he had done it through fear of being caught, if he had denied it through cowardice, if he had tried to smuggle the Peacemen the note because of his fear of us—then I most assuredly would have hanged him. But he did what he did because of a mistaken belief that we are not on the side of the Great Light; he thinks that following the way of the Earthmen is following the Way of our Ancestors. Therefore, his death shall be honorable. Bring the Cup, Dran peDran."

The First Officer bobbed his head. "Yes, sir." He turned quickly and left the room.

Kris faced the stony-featured



prisoner. "Your clan, the Danoy, will be told that you died in the course of duty, Vels peKorvin. I will see that the Passing Service is said for you at the Temple in Vashcor."

*Hypocrite!* Kris thought accusingly. *All this solemnity when the thing to do is just to beave the man overboard. But revolutions move slowly.*

The seaman bowed his head. "You are a great man, captain, even though you are misled. My prayers shall be for you."

"And mine for you. Would you care to hear the Scripture?"

The sailor nodded.

Kris crossed the tiny cabin to the locker where Dran peDran kept his personal belongings. He opened it, took out a thick book bound in brown deest leather, and began leafing through it.

At that moment, Dran peDran came in quietly, holding a cup of peych beer. The little cabin was silent as the prisoner took the bitter-tasting cup and drank it. He lay down on the bunk, face down, his hands clasped above his head. It would be a few minutes before the poison took effect.

"*The Book of History*," Kris peKym said. "Second section. 'And the Great Light spoke to the Lawyer Bel-rogas, saying: The Cataclysm has destroyed those who were not righteous, and they shall suffer forever. But he who dies for My sake shall live in eternal peace.'

"'Now, at that time, a certain man came to Bel-rogas.'"

### III

The *Krand* weighed anchor at firstlight, sailing out of the Bay of Tammulcor and making her way due east, along the coast. She skirted Thyvocor, the small port city of Thyvash Province, staying well out to sea so that her tall masts would not be seen. Then she angled north-east, heading for the Bronze Islands.

The trip was uneventful. The *Krand* dropped anchor well offshore in the dead of night. In the distance could be heard the rumble of the sea splashing against tall cliffs, and the occasional cry of a flying sea lizard.

Silently and carefully, the crew set to work. All that night they labored, doing their job doggedly and without ease. A ship's longboat made the passage from ship to shore and back again many times. It was not until firstlight that Kris announced that the job was nearly done. He made the last trip himself.

Kris peKym eased himself down into the longboat and whispered: "Dran peDran, if you make those oars creak one more time, I swear I'll tie a rock around your neck and throw you overboard."

"Us is made twelve trips in this boat," said Dran stolidly. "Us is carried lots heavier cargoes than you is, captain. How many creaks is you heard?"

Kris glanced at the other crewmen

in the dim illumination of the setting Lesser Light. "I heard three," he said succinctly. "And that's about four too many."

One of the men chuckled a little as he pulled at the oars, and Dran's sharp whisper cut across the merriment. "You doesn't laugh at the captain's jokes at a time like this! Shut quiet!"

Kris grinned in the darkness as the longboat moved toward the shore in the blackness. They were a good crew; they knew what they were doing, and they knew how to keep their mouths shut. And they were loyal; that was the one important thing. They knew that their captain was right, and they'd follow him to the Rim of the World itself.

The *Krand* was anchored off the rocky shore of Bellinet, the largest of the Bronze Islands. Nearby was a small village. None of these villagers must know that the great load of cobalt from the *Krand's* false hull was being unloaded here.

The constant drizzle of rain that marked every Nidorian night wetted the bodies of the sweating seamen and dripped gently into the bottom of the boat. And there, the heavy cobalt coins glistened metallically in the faint light. It was the last load; the rest of the loot from the Bank of Dimay already lay in the tidal cave beneath the cliff.

After several minutes, Dran peDran whispered: "Captain! Us is here. Does you want to go in?"

Kris nodded. "I'll help you transfer it inside. We've got to hurry."

He glanced up and frowned. The rain was already letting up; soon, the Great Light would be coloring the eastern sky.

He and the crewmen stripped off their black seamen's uniforms—a vest and knee-length trousers, all alike except for the white stripes on the front of the vests of the officers.

Kris slid silently into the gently heaving water, feeling its coolness against his overheated body. "All right, Dran," he whispered harshly. "Give me the first load."

Dran heaved a string of coins out of the bottom of the boat. Each coin was pierced by the symbolic triangular hole which stood for the beam of light that pierced the lens of each temple as it illumined the altar. Through each of the holes ran a strong bronze wire, which was twisted to form a loop. And on each loop was a quarter of a man-weight in coins—more than twenty thousand weights of solid cobalt!

Kris grasped a loop in each hand, took a deep breath, and dropped to the sandy bottom of the surging sea, twenty feet below the surface. Slowly pushing his way toward the cliff ahead, he felt his way with his feet. As long as he kept on the sand, he was all right.

In the darkness, it was difficult to tell where he was going, but the gentle slope of coral sand that spilled out of the underwater cave before him was easy to follow. He moved one foot after another cautiously.

Holding the loops of coins, he pushed himself toward the cliff. Finally, he felt the opening in the wall. He lowered his head and crept up the slope toward the cave beneath the cliff. The only opening was completely underwater at all times, and traveling the passage, especially with a heavy load, required the ability to hold a breath and keep from panicking.

When at last his head broke water, Kris peKym took a deep, gasping breath. Above him, in the cave, were two of his crewmen. One of them held out a hand.

"I'll take the coin, captain."

Kris handed the two loops up to him. The light of the flickering oil lamp cast changing, moving shadows across the interior of the dark cavern.

Kris climbed up from the pool that led to the outside and walked with the two men who were carrying the loops. They went to the heavy, leaden casket at the far end of the cave. It was filled with oil, the sea-smelling oil of the great lizards that prowled the coasts of the Bronze Islands. The huge, vegetarian beasts were excellent sources of oil, although it was scarcely worthwhile to ship it to the mainland of Nidor, where plant oils from the ubiquitous psych-bean were so cheap.

The coins went into the oil-filled chest. In sea water, even cobalt would pit and deteriorate. The oil would protect it for a while.

"Captain! Here's another!" One of the crewmen had bobbed his

head above the pool; in his hand was another loop of coins.

Kris watched as the rest of the boatload, representing the last of the great mass of cobalt that had been taken from the Bank of Dimay, was hauled, loop by loop, into the hidden cavern.

When the last one had been dumped into the chest, he grinned and said, "That's the last of it, boys. She'll stay there until we need her. Lock it up."

One of the seamen stepped up to the casket, closed the lid, and padlocked it. He handed the heavy bronze key to Kris. "There he is, captain," he said, a twisted smile crossing his face. "They'll never find it here."

There was one more precaution. They shoveled sand and heavy chunks of coral over the box, covering it completely. When that was done, Kris said, "All's well, boys. Let's go."

The cobalt was buried now the cobalt whose theft could trigger the



movement that would, at last, drive the hated Earthmen from Nidor. Kris hoped so.

He took one last look. Then the three of them dived into the pool and swam through the passage to the waiting longboat.

The Great Light was just beginning to lighten the cloud-laden sky in the east.

In Vashcor, that same day, Norvis peKrin Dmorno and Marja geDel Vyless were performing their duties at the Party headquarters with more than usual energy.

"So Kris has succeeded in robbing the bank," Marja said. "Wonderful!"

"It is," the Secretary said quietly. "He carried the job off perfectly—and your father's out in the towns now, making speeches claiming it was the Elders who did it."

"Will that line of approach work?"

"I'm not sure," Norvis said. "It's your father's policy, though, and he's the Leader. For fourteen years, Del's been preaching against the Council. If he keeps it up, he may eventually convince the people that the Elders are corrupt."

"Where's Kris now?" Marja asked.

"Caching the money, no doubt. He ought to be back here soon. Why?"

"Oh—nothing much, Norvis. It's . . . just that I'd like to see him again. It's kind of comforting, having a big man like Kris around the office."

Norvis smiled wryly. "Thanks, Marja."

"I didn't mean—"

"I understand."

"I know you do. Kris is . . . well,



sort of wonderful. I wish I could get to know him better. But he's always out crusading some place or other, just like Father."

"Maybe you'll get the chance soon, Marja. If—"

He was interrupted by a sound of knocking at the door.

"Come in!"

A yellow-clad acolyte entered. "From the Priest-Mayor," he mumbled. "A message." He handed Norvis a sealed envelope, which the Secretary broke open immediately and read.

"What is it, Norvis?"

"Grandfather Marn peFulda wants to see me at once. I'd better go, I guess."

"Norvis peKrin Dmorno, Secretary to the Merchants' Party," the acolyte intoned.

Grandfather Marn peFulda Brajyjd, Priest-Mayor of Vashcor, looked up as Norvis entered the office. "The peace of your ancestors be with you always," he said.

"May the Great Light illumine your mind as he does the world. You asked to see me, Grandfather?"

The Priest-Mayor looked at his visitor and smiled. "Sit down, my son. We'll not stand on ceremony here."

As Norvis sat, the Grandfather lifted an eyebrow at the acolyte who stood at the door. "Be about your duties," he said. "I have nothing to fear from Norvis peKrin Dmorno."

The acolyte bowed and left, but

it seemed to Norvis that there was a trace of reluctance in his demeanor.

"My staff is rather on edge," the Grandfather explained apologetically. "They seem to fear for my life."

"They have nothing to fear from me, Ancient One," Norvis said.

"I know. But the priesthood is not exactly in good odor here in Vashcor; my Mayoralty is hardly considered any more."

Norvis shrugged. "For that, Aged Grandfather, I am sorry."

"I know." Suddenly, the priest put his finger to his lips and winked. "I'd like to have you take a look at this," he said.

He rose and tiptoed to the door, his blue robes gathered up with one hand so they wouldn't rustle. He winked again.

Norvis caught the meaning of the gesture and said, "Very interesting, Grandfather. Very interesting. May I look at it again?"

The priest paused at the door for a moment, then jerked it open suddenly. The acolyte who had been listening at the hinge crack nearly fell inward. He regained his balance just in time, after a half-stagger, and his golden facial hair was suffused with a pink glow of embarrassment from beneath.

"You were told to go about your duties, Gyls peDorf," the priest said sternly. "You disobeyed."

"Yes, Grandfather." The acolyte shrank in on himself in an agony of humiliation. *An unsuccessful eavesdropper, Norvis reflected, is a pitiful sight.*

"Having disobeyed my order, you must take your punishment. Go to your cell; fast and pray for the next three days. Go, Gyls peDorf."

The acolyte took off down the hall as though all the demons of the Outer Darkness were after him—which, of course, might well have been the case.

Chuckling to himself, the Grandfather closed the door again and returned to his desk. "Thank you, my son; you have a quick wit. My staff is loyal—too loyal, sometimes, I fear. But no one will hear us now."

Norvis gave the priest a half-smile. The cleric had something on his mind; that much was obvious. Ever since he had received the invitation to the Grandfather's office, he had been wondering what it was that perturbed the old priest.

"My son," he began, "it is more than fourteen years since a man has been stoned for blasphemy on Nidor. Before that, no man had been punished thus for over two centuries. You may recall the case. It took place in Holy Gelusar itself, and the man stoned was Norvis peRahn Brajjyd, the grandson of Grandfather Kiv peGanz Brajjyd, the present leader of the Council of Elders."

"I recall," Norvis said, trying to keep his voice calm. Did the priest know? Did he know that the man he was talking to was that very Norvis peRahn Brajjyd, the boy who presumably had been stoned to death the year before the Great Depression began?

"Before that instance," the Grand-

father went on implacably, "no one had been stoned because there was no blasphemy—or, at least, none in public. There has been no one stoned since because blasphemy has become almost commonplace. We live in wicked times, my son."

"I quite agree, Grandfather." *What's the old man getting at?*

Grandfather Marn peFulda said: "We have a problem here, Norvis peKrin. I'll put it bluntly. The Leader of your Merchants' Party—Del peFenn Vyless—is a troublemaker. Ever since the robbery of the Bank of Dimay, he has been implying that we—the priesthood—are behind it."

"You must forgive Del, Grandfather," Norvis said quickly. "He preaches against the Council of Elders, true—but remember, he *is* a sailor, and seamen are likely to become acerbic at times."

Marn peFulda shook his head. "That's not the point, my son. I don't disagree with what you have to say. I, too, think that the Earthmen are . . . ah . . . a disturbing influence on Nidorian culture. I would . . . ahem . . . like to see any such influences removed. But I don't think destroying our Government is the way to do it."

Norvis felt a slight shock. The thought that any of the priesthood would agree with the Merchants' Party program, would have any point of tangency whatsoever, was, to say the least, unusual.

He leaned back in his chair,

stroking the downy fuzz on his cheek. "I don't think I quite follow you, Grandfather."

The Priest-Mayor looked worried and thoughtful. His face seemed somehow gaunt, and the silver of his facial hair looked oddly gray. Moving slowly, deliberately, he leaned across his desk toward Norvis. When he spoke, his voice was low, almost a whisper.

"I want to tell you something, my son. I don't want you to interrupt, because, if you do, I may not be able to finish what I have to say. I will speak to you as though we were of the same age, as though there were no difference between us. Forget that I am a priest; remember only that I am a Nidorian."

Norvis nodded. "I will listen, Marn peFulda."

He had not used the formal manner of address, and the priest looked just a trifle surprised for a second: Then he smiled bleakly.

"Thank you, Norvis peKrin. I know that what I say will not go beyond you—but if it does, I will refute it."

"You need have no fear, Marn peFulda." For the second time, Norvis used the familiar address.

"Very well, then. And, as I said, no interruptions." He took a deep breath, but his voice was still low when he spoke.

"The Council of Elders is blind. When the Great Light told us our duties, immediately after the Cataclysm, he spoke through the great Lawyer Bel-rogas." Marn peFulda

tapped the Book of Scripture on his desk. "It is all here, and we cannot disbelieve His Word.

"But Bel-rogas warned us that the Great Light had also spoken of the Great Darkness."

Norvis said nothing. The mention of the Great Darkness was well known, but no one paid any attention to it any more. Norvis, whose theological studies at the Bel-rogas School of Divine Law had been abruptly interrupted, two decades before, by a trumped-up expulsion arranged by the Earthmen, had little love for theology in any event.

"The Great Darkness, according to Bel-rogas, is the antithesis of the Great Light," the Grandfather said. "It is a being whom the Great Light created as a counterbalance to Himself.

"Of late, we have come to discount the power of the Great Darkness. We have come to think of him as merely a natural phenomenon, as an absence of the Great Light. Through four thousand years of history, we have seen that when night comes there is nothing to fear. The Great Light is not shining upon us at night, but we do not find in darkness a negation of light, merely the absence of light." He paused dramatically, and his voice took on urgent undertones.

"But I tell you that the Great Darkness is a *living being*, as alive and ambitious as you or I! Through forty centuries, he has remained silent, not obtruding himself upon us, waiting until we no longer believed

in *bim* as a personality. And now, his time has come. He is here, among us; he has sent his minions to corrupt our priesthood, our Council, our lives, and the Way of our Ancestors.

"We of Nidor have traveled in the right path, we have moved in the Way of the Light. Why? Because we dared not follow the Darker Path? No. We moved in the Way of the Light because we knew no other way. The Great Darkness had not tempted us from that Way. But now—now we have been invited to try the path of Darkness." He paused again and looked questioningly at Norvis. "How do you feel about this?"

"You may be right, Grandfa . . . Marn peFulda. But how do we know that one Path is better than the other?"

The priest looked scornful. "Is it better to walk in the light of day, where one can see where one is going, where one can see one's goal, or is it better to walk during the night, when one cannot see what lies ahead of him, when his goal is obscured in blackness?"

Norvis shifted uncomfortably in his seat. He could see what argument the Grandfather was driving toward, but he wasn't quite sure he wanted to agree with it on theological grounds. "Where are you heading, Grandfa . . . Marn peFulda?"

"Just this: it is obvious from the history of the past century that we have been diverted from the Way of

our Ancestors. And I say that it is the Earthmen who have done this! The Earthmen who came among us and built their School, up in iHoly Gelusar, supposedly to teach the Law. A stream of wickedness has come from the School under the guise of Light. The School has changed our world—taking our best minds, twisting them, filling them with words of the Earthmen. The Earthmen are the minions of the Great Darkness!"

Norvis frowned. He had much the same opinion of the Earthman-founded Bel-rogas School, but he had scarcely expected to hear it from a priest. *Marn must not have gone to the School*, he thought.

To test the priest's logic he asked, "But Grandfather—the Earthmen walk and act and speak in the daylight, when the Great Light shines. How can that be?"

"Can't you see, my son? The Scripture is metaphorical in its meaning. The passages are symbolical. They do not mean the darkness of an ordinary night; they mean the Darkness of a lack of morality, the Darkness of a rejection of the Way or our Ancestors, the Darkness of the deviation from the Path of the Great Light."

"I think I follow you, Grandfather. In fact, I'm sure I do." He paused for a moment. These were surprising words to hear from a priest's lips—and evidently it was an opinion the priest had been nursing a long time.

"My position," said Grandfather



Marn peFulda, "is this: I believe that the Earthmen are agents of the Great Darkness—in fact, I *know* them to be so. But I cannot condone the attitude of Del peFenn Vyless, the Leader of your party."

*That's no surprise,* Norvis thought. *The way Del howls for the heads of the Elders, it's a wonder the good Grandfather can keep a civil tongue in his head when he speaks of him.*

"I do not feel," the priest went on, "that the proper service of the Great Light includes the throwing-over of His ordained priesthood; it must include only the correction of the evils which have invaded the Council of Elders. And if you were to change the line of attack of your Party somewhat, I . . . I might be persuaded to lend some influence of my own."

*A reformer!* Norvis thought. He could hardly keep from smiling. It was exactly what he wanted—exactly what the Party needed! He had hardly dared hope it would happen.

Priest against priest; liberal orthodoxy against reactionary reformation—nothing could be more suited to his plans.

"Very well, Grandfather," he said, "I'll see what can be done." This interview altered things considerably. He had to leave, now. He wanted to send an anonymous note to Grandfather Kiv, the head of the Council—pitchforking Kiv into action that would set in motion the climax of the plan.

The priest nodded solemnly and raised his crossed forearms in bene-

diction. "May the Great Light illumine your mind, my son, and lead you to the Way of Light."

"May He illumine your mind as He does the world," said Norvis, bowing.

#### IV

In his office in Holy Gelusar, capital city of Nidor, Elder Grandfather Kiv peGanz Brajjyd—leader of the Council of Elders of the Sixteen Clans, and traditionally the most powerful man on Nidor—sat quietly, staring at the sheet of printed lettering on the desk before him.

He winced, glanced away. In order to dismiss it from his mind for the moment, Grandfather Kiv peGanz lifted his eyes to the window which looked out on the Holy City. There were buildings out there, buildings which had stood for centuries. Some of them had stood for two, perhaps three thousand years.

Gelusar, the City of the Great Light Himself, seemed safe from the corruption of the masses, but—

But *was* it? Was it *really* safe?

Again he glanced at the note, as though to discover some meaning which was different from the meaning he had read before. No new interpretation came, though. There was none. The words remained the same.

Grandfather Kiv glanced reflectively up at the cloud-laden sky for a moment. Then, leaving the note on his desk, he locked his office and went down to the Temple. He knew

he couldn't carry the weight of this decision alone.

The dim vault of the Temple was empty except for a few worshipers here and there, praying among the kneeling benches.

There were less than usual, Kiv noticed, as he made his way down the aisle toward the altar. It had not been like that when he was younger. He could remember long ago, when the Earthmen had first come, the days when the Temple had been steamy with the breath of many worshipers.

He remembered the Hugi Crisis—a crisis that he, himself had caused, more than fifty years before. The people had flocked to the Temples then.

Kiv sighed deeply. His eight decades of life weighed heavily upon him. His daughter, Sindi, had died, miserable and unhappy. His only grandson, Norvis peRahn, had been stoned to death for blasphemy, more than fourteen years before.

He lifted his eyes toward the altar. From the great lens in the roof of the temple, the diffuse rays of the Great Light were focused upon the refracting surface of the stone altar top.

*Great Light*, he asked, *what have I done?*

The focus of the Great Light was near the Left Pit. Kiv knelt before the glowing spot, keeping his eyes carefully averted.

*O Great Light*, he asked again, *what have I done?*

And this time, he seemed to hear

a voice. *What have you done? Nothing!*

For a moment, Kiv peGanz felt deep relief.

And then the full import of what he had seemed to hear struck him.

Nothing?

Had he done *nothing*?

Had he neglected to do what he ought to have done?

He glanced at the pit in which the Great Light seemed to burn. It scared his eyes and he turned away. What was it the Earthman, Jones, had called the Great Light?

*A blue-white star.*

What it meant, Kiv had no notion, but he had been told it by the blessed Earthman more than five decades before.

For the first time, he raised his eyes to the lens in the roof. And he made a prayer that had never been heard before on Nidor.

"Oh, Great and Holy Bluewhite-star," he said softly, "if I have not acted according to Your wishes, if I have not acted at all—then give me the strength to act now."

He paused for a moment, but there was no response.

"I thank you, O Great Light. You have illumined my mind."

Rising quickly, he genuflected and then hastened toward his office. The other worshipers seemed to pay no attention to the old man's coming and going.

Back at his office, he looked once again at the note.

*I have done nothing, he thought. I must act.*

The note said:

Most Holy and Ancient Grandfather:

It has come to my attention that a certain thief has stolen eight million weights of cobalt from the Bank of Dimay. According to the Law, the vaults of the Holy City of Gelusar must make up any losses of money. But if you do this, and the extra money which has been stolen is spent by the thieves, it will lower the value of all our money.

On the other hand, if you do *not* replace it, the Bank of Dimay will fail.

What is your decision, Ancient Grandfather?

The note was unsigned.

Kiv fingered it for a moment. *Can I take the chance?* he asked himself.

No. He couldn't. He had to assume that the note was true. If he replaced the coinage in the vaults of the Bank of Dimay, then, when the thief dumped all that coinage on Nidor, every weight would be devalued. Money would be worthless.

Yet, if he refused to replace the money, the Bank of Dimay would be bankrupt, and its scrip mere paper. But the rest of Nidor would maintain its monetary integrity.

That was the core of the matter. It was the Bank of Dimay against all of Nidor—and Dimay would have to be sacrificed. Whether the note were true or not, there was only one thing he could do. And, by the Great Light, he *would* do it!

Calmly, the old priest reached for the pen on his desk. His gnarled hands quivered a little, but he pulled

a sheet of embossed paper to him and began to write.

The *Krand* made its way into the crowded harbor of Vashcor nearly a week later, with Kris peKym standing proudly on the deck, staring at the sprawling seaport as if he were about to receive a hero's ovation.

They docked at one of the smaller piers, and Kris turned to Dran peDran. "When the cargo is unloaded, give the men a day's liberty," he told the Bronze Islander. "I'm going to pay a visit to Headquarters to see what our next job is."

"Is fine, sir," Dran peDran said.

Kris nodded and climbed ashore. He moved quickly through the knot of sailors and dockhands that thronged the busy waterfront, heading toward the small frame house that was the headquarters of the Merchants' Party.

Norvis peKrin Dmorno looked up and smiled in greeting as Kris entered.

"Well! The pirate has returned!"

"Safe and sound," Kris said, glancing around. "I see Del's not back yet."

"No," Norvis said. "I expected him back yesterday, but there's been so much trouble in Tammulcor that he must have been delayed. How did your voyage go?"

"Well enough. We brought back copper and tin from the Bronze Islands, and cloth from Tammulcor." He frowned, then added: "And we lost a man: Vels peKorvin

Danoy. He went overboard during the voyage." Kris saw no need to elaborate; the affair was closed, and such losses at sea were not uncommon.

Norvis nodded. "I'll see that the proper papers are filled. Have you heard the news about Tammulcor? There's trouble down there."

"I dare say," Kris replied, grinning. "What happened? Someone rob a bank?"

Norvis was only slightly amused. "That, and more. The Council, under instruction from Elder Grandfather Kiv peGanz Brajjyd, has refused to replace the money. The scrip of Dimay is utterly worthless."

Kris looked puzzled. "Why the devil did he do that?"

Norvis smiled. "Because he doesn't know where the cobalt is, of course. If he were to replace it, and back the Bank of Dimay, what would happen if we dumped all that cobalt back on the market? There would be eight million weights too many floating around Nidor. See?"

Kris nodded. "Good. When are we going to dump it then? You want me to go back and dig the stuff up?"

"Not at all. It's causing more than enough trouble right where it is." The Secretary leaned backward and put his hands behind his head. "We're *wicked*, aren't we?" he asked suddenly.

"Living devils," said Kris. He stood there silent for a moment, toying with a carved-ivory statuette some sailor had made from a bone



of a large sea animal and had given to Secretary Norvis long ago.

Suddenly, the abrupt *plop plop plop* of cloven deest-hoofs sounded outside. Kris looked up to see Leader Del pulling up at the hitching-post in front of Headquarters.

Kris nodded coolly as the Leader entered. Del's fine golden body-down was covered with a dull coating of road dust from his journey, and he showed signs of fatigue.

"Miserable trip," Del peFenn Vyless grunted as he strode in and sat down. "I'd rather sail from Gycor to Lidacor the long way than travel from Tammulcor by deest."

"How come you rode?" Kris asked.

"Couldn't get a ship," said Del. "I was in Elvisen when I found out there was trouble down in the south, so I rode down there. But the harbor's so fouled up because of the riots that there weren't any passenger ships available." He coughed and wiped perspiration from his face.

"Find out anything interesting down there?" Norvis asked.

"Aye," Del peFenn said heavily. He was a big man, tall for a Nidorian, with wide, muscular shoulders. He still walked with the rolling stride of a seafaring man, although it had been ten years since he had last captained a merchantship. "Aye. We have a bunch of raggle-tail grumblers who don't know what they want, but who know they don't like things the way they are."

"Sounds like promising material for us," Kris said.

Del dropped into a chair at the side of the bare room. "I don't know," he said. "The fatheads didn't want to listen to me." The Leader smoothed a thick-fingered hand over his silvering down.

At Del's bitter words, Kris felt a moment of triumph. He *knew* blustering, clumsy Del was doing things the wrong way—and here the Leader himself was admitting failure!

Del shook his head. "The Elders pulled the rug out from under those people by scragging their bank. They're rioting, marching up and down, burning things and yelling. And yet . . . yet they can't be persuaded that the priests are no good for them. I don't understand it, Norvis."

"Suppose we send Kris down there?" Norvis suggested suddenly. "We need Tammulcor—it's the lifeline of Gelusar and all the Central Plains area. It's a trading port surrounded by plenty of farming country—and the farmers are still on the side of the Elders, despite all that's happened to them."

"Why send Kris?" Del asked un- easily.

"He's a new face. He might be able to do the trick where you failed. They know you from way back, and they know you don't respect their religion. They *don't* know Kris."

Del considered that for a moment. "All right," he said finally.

"Let's send Kris to Tammulcor." He turned to face Kris peKym, who had been watching the interplay silently and without opinion. "You'd better go by deest," he said. "The harbor's blocked up."

"You want me to go immediately?" Kris asked, surprised despite himself.

Del nodded. "I think so. Come—let's sit down and plan out what you're going to say to them."

## V

*"Ob, the life for me is the beav-  
ing sea,  
And the feel of a keel afloat;  
The rise and dip of a sturdy ship  
Or the roll of a rocking boat!"*

Kris peKym's strong baritone rang joyously through the warm, humid summer air.

"You is so right, captain," Dran peDran said. His voice sounded tired. "I is weary from riding this cursed deest. It's no way for an honest sailor to travel."

"Quiet, youngster," Kris said smilingly. "The feel of a deest ride, if you but had the sense to notice it, is very like that of a boat."

"Yes. I is in agreement. I is never been sea-sick in my life, but I is definitely deest-sick now."

Kris grinned. "Better get used to the swing of it, Dran. We've got a long way to go."

The seaport of Thyvocol was not far behind them; Tammulcor was more than a day's journey overland ahead. They were on the second

leg of their journey southwest to the big seaport.

There was a direct route from Vashcor to Tammulcor, but it was winding, dusty, and rarely traveled. There was the constant menace of bandits to be considered, too. Instead of the overland route, Kris and Dran peDran had taken the coastal packet south from Vashcor to Thyvocol, and there had purchased two sturdy-looking deests with which to complete the journey overland from mid-point. Vashcor lay directly west of the small port of Thyvocol.

"Flat, dull country this is," Dran commented as they spurred their mounts through the coastal lowlands.

Kris nodded. It *was* dull country, all marshy gray-green grass and flat, swampy plain. But it was necessary to cross through it, and so they *were* crossing it. It sometimes was necessary, Kris realized, to do perfectly dull, dreary things like crossing the lowlands, in order to get to where more exciting things could happen.

Like getting to Tammulcor, for instance—Tammulcor, where bewildered men were rioting and demonstrating against anything and everything. Once in Tammulcor, Kris would face a difficult job, but he was looking forward to it.

There was an analogy. For the past three years, he had taken orders from Del peFenn—dull, blockheaded, blustering Del peFenn. Kris had threatened rebellion from time to time, but Norvis had always man-

aged to smooth things over. Now, at last, Del peFenn had sent Kris off to Tammulcor in a position of unquestionable authority. It had been worth waiting for.

Dran yawned. "When is we getting to Tammulcor?"

"Soon, Dran peDran. Be patient."

*Easy to say*, Kris thought. He scowled as the deests barreled through a muddy marsh and kicked up a shower of brackish water. This trip would *never* end.

Somehow, he managed to hold himself in check for the rest of the long day. Toward nightfall, the Great Light began to dim rapidly, and soon the nightly drizzle started coming down.

"Do we camp for the night?" Dran asked.

Without turning his head, Kris said, "No. Let's keep going."

They kept going. Before morning, the harbor of Tammulcor came into view. Smoky fires trailed upward, giving sign of violence the night before.

"There's been trouble here," Kris said. "And there'll be more." There was a note of keen anticipation in his voice.

The Great Cor Bridge across the Tammul river was guarded by a group of ten husky men wielding heavy truncheons. One of them was armed with a cocked and loaded rifle—an expensive weapon, but an effective one. The guard, Kris thought, looked as though he could handle the gun effectively enough.

They had placed a heavy wooden barrier across the bridge, just high enough to prevent even a trained deest from leaping over it. As Kris and Dran trotted their mounts up to the barrier, one of the men stepped forward to meet them.

Before the Peaceman could say anything, Kris called out: "Who are you? Why is the bridge blocked?"

"Peacemen!" said the burly one. "Who are you, and what is your business?"

"My compliments to the Uncle of Public Peace," Kris said smoothly. "I can see that he chooses his men well."

"What do you want? Why do you go to Dimay?" the Peaceman repeated, obviously attempting to ignore the naked flattery. But his voice was less harsh than it had been.

"I am Kris peKym Yorgen," Kris said. "Merely a citizen who wants to go to Tammulcor. Is that wrong?"

"Not wrong," said the Peaceman. "But foolish. The whole province is in an uproar; there is rioting in the cities and bands of looters in the country. You take your life in your hands to enter Dimay."

"Is that why you're here then?" Kris asked with feigned innocence. "To warn travelers?"

The Peaceman shook his head. "No. Somewhere in Dimay, someone has hidden eight million weights in cobalt. We don't want it to leave the Province."

"Indeed? Eight million weights?"

"Yes. You may enter if you wish, but watch yourself. And don't try to pass an exit barrier without stopping."

"Of course," Kris said meekly.

The barrier was lifted, and Kris and Dran urged their deests across the bridge.

"What is all that for, captain?"

Dran asked as soon as they were out of earshot.

"They're playing it smart. They didn't ask us if we had any coins when we came in, but you can bet your life we'll never leave with any. They're letting cobalt into the province, but they're not letting any out."

"I wonder why," Dran said slyly.

"I wonder!"

They trotted on across the Great Cor Bridge.

The first task at hand was to find lodging and a place of business. Then, Kris thought pleasantly, once things were set up, things would really begin to pop in Tammulcor.

Kris reined in his deest, and Dran pulled up alongside him. "What is we going to do?" Dran asked.

Kris glanced around. The city was quiet, just now, but it looked as if it were about to explode into violence any minute. An uneasy fog hung over the port, and even the usually placid Tammul River looked oddly threatening. Restless townsfolk moved aimlessly about the streets, and here and there an ugly-looking little knot of men was gathered, whispering earnestly.

"The first thing," Kris said, "is to find a place to stay. Suppose you get moving into town and find some hotel with room for us."

Dran nodded. "And then?"

"I want to find an office for us. We need a center of operations. I'll go look for that, and you meet me back here at midmeal. Got that?"

"I sees perfectly," Dran said.

"I hope you does," said Kris.

Kris rode down into the heart of town, watching carefully for sign of an office building that would serve his purposes. He needed one centrally-located, impressive-looking, and easily defended in case of emergency.

After about half an hour, he found what he wanted. He hitched up the deest and strode inside. A thin youth with blinking eyes looked up lazily at him from a chair in the vestibule of the building.

"Yes?"

"I'm looking for the landlord," Kris said. "I want to rent an office."

"He isn't here," the boy said.

"When will he be back?"

The boy shrugged complacently. Kris took a step closer to him and grabbed him by the scruff of his tunic.

"Hey, let go of me!"

"Not so much noise," Kris said mildly. "Where's the landlord, now?"

"He's . . . upstairs," the boy said.

"Get him," Kris commanded.

The boy dashed away, not bothering to conceal the fact that he was



happy to be out of Kris' reach, and returned a few moments later with a sour-faced man of middle age. The landlord confronted Kris with an expression of unhidden hostility. Kris noticed that a wide-bladed psych-knife was thrust in the sash of the man's trousers.

"You the fellow who wants an office?"

Kris nodded. "My name is Kris McKym Yorgen. I'm interested in renting one of your vacant suites."

The landlord clamped his lips together and grimaced owlishly. "We don't have any vacant suites," he said.

"Oh? That's odd; I'd say the building was at least half empty, from the looks of things."

The man's hand slipped to the pommel of the psych-knife, but he made no move toward Kris. "I say the building's full, and I say I don't want any strangers renting here. What are you going to do now?"

Kris shrugged. "Well, if you're going to be that way about it—"

Casually, he drew a thick sheaf of purple-and-gold Bank of Pelvash scrip from his pocket, riffled through the notes reflectively, smiled, and stuffed the roll of bills back in the pocket. He drew forth a handful of cobalt coins, jingled them, and likewise replaced them. Then, whistling a sea tune, he turned and sauntered toward the front door.

"Just a minute," the landlord said hesitantly as Kris started to leave. "What kind of business you say you were in?"

"What does it matter?" Kris countered. "The building's all full, isn't it?"

The landlord smiled craftily. "That was Bank of Pelvash money you had there, wasn't it?"

"What of it?"

The landlord put his palms together. "Possibly I could find a vacancy," he said. "Quite possibly."

The sign on the door said:

SCRIPT EXCHANGE OFFICE

Kris grinned as he looked at the reversed printing on the inside of the frosted glass door. It looked impressive. If Dran were doing his duty, spreading the word around Tammulcor, it wouldn't be long before the good folk of the town would be clawing at each other to see who'd get inside that door first.

Gently, he slid open the desk drawer and looked down at the handgun that lay there. It was one of a pair, the other of which was concealed inside his belt, covered by his vest.

They were handsome weapons, lovingly made, a fine pair of the few handguns in existence. The rifle had become a fairly common weapon in recent years; some student at the Earthmen's school had invented it for use by the farmers in the days of the Great Depression, when, because of the superabundance of crops, the herbivorous forest animals had multiplied like wildfire. The farmers had needed something to

hold them off when they became hungry in the second year.

They were expensive because they had to be made of specially treated iron; bronze would be much too weak to withstand the violence of the powder unless the weapon were reinforced—in which case it would be too heavy to carry easily. And there was, of course, no need for a weapon like that. What good is a gun so big you can't carry it?

The pistol was Norvis peKrin's idea. Instead of one charge, it carried four in a little revolving cylinder, each with its own cap. Norvis had been very careful about allowing *that* secret to leak out.

Thus far, very few people had realized the effectiveness of such weapons against men—although there were undoubtedly a few farmers in Dimay who were learning fast, and certainly the Peacemen had recognized it.

Since the rifle was designed to kill at long range, it was necessarily long enough to give proper distance to the copper projectile. But Norvis' idea had been to make a short-range gun for personal protection. It didn't need to be as big or as heavy, because it carried less powder and had a shorter barrel.

Someone else might think of the idea—but unless he had Norvis peKrin's ingenuity, the gun would only fire one shot without reloading—not four. As he studied the gun, Kris reflected that perhaps he had been underestimating Norvis a little.

Suddenly he heard footsteps in

the corridor. He pushed the desk drawer closed and looked up.

There was a shadow on the other side of the frosted glass, and then a timid knock.

"Come in," Kris said.

The short, stocky man who opened the door was obviously a farmer. His hands were calloused, and he wore the heavy cloth of a field worker. In his belt was a long psych-knife.

"Are you Kris peKym Yorgen?" he asked cautiously.

Kris flashed his most winning smile. "I am. What can I do for you?"

"Well . . . well—" The man took a deep breath. "I heard somebody say that you were redeeming Bank of Dimay notes. Is that so?" His tone was querulous, timid, as though he was certain he was about to be called a liar.

"Perfectly true, my dear fellow," Kris said. "A ten-weight Dimay note will bring you a five-weight note of Pelvash."

Without hesitation, the farmer pulled a wad of bills from his belt pouch. "These ain't no good at all. Nobody will take them. I got two hundred weights here, but I can't spend them."

Kris opened the drawer in his desk. On top of a huge pile of Pelvash notes lay the heavy pistol, which he pushed casually aside. He took out twenty-five weight notes and counted them ostentatiously.

"Here you are, sir. One hundred

good Pelvash notes for your Dimay money. May I see them?"

He took the Dimay notes, leafed through them, and dropped them into another drawer. Then he handed the Pelvash bills to the farmer. "It's a pleasure to do business with you, sir."

"And you, sir," the farmer said. His eyes glittered; obviously he still did not quite believe such a wind-fall could occur. He mumbled his thanks, suspiciously counted the notes, and left hurriedly.

Kris watched him go, and chuckled in amusement. It was a good business, he reflected. If only it worked the right way!

At this very moment, Kris thought, Dran peDran is roaming around the town telling people of the fabulous fool who was buying up the worthless Dimay scrip at two-to-one. And now there was a farmer who would also spread the tale. Before long, how worthless would the Dimay currency be?

By mid-afternoon, there was a line forming that stretched out of Kris peKym's office, down the stairs, and out into the street. Business was booming. The word was getting around Tammulcor rapidly.

One at a time, Kris took care of each customer, ushering him into the office, giving them a winning smile and half their money back—in cobalt-backed notes of the Bank of Pelvash.

It was a long day. By the time the Great Light had begun to fade, he

had collected nearly sixty thousand weights in Dimay bills, and had paid out half that in Pelvash scrip. The drawer that held the redeemed Dimay currency was overflowing.

And then it happened—the thing that Kris had been half expecting all day. Two men stepped into the office. One of them, a swarthy one with a heavy scar drooping over one eye, walked up to Kris' desk and suddenly jerked a heavy psych-knife out of his belt. The two-foot blade, with its blunt end and razor-keen edge, was poised six inches from Kris' throat.

At the same time, the second man drew his knife and stationed himself at the door, facing the crowd outside.

"Nobody's going to get hurt if they behave themselves," he said roughly. There were several men in the crowd who were carrying the heavy knives, but none of them did anything except shrink back from the doorway.

The man with the scar held his knife steady. Kris stared evenly at the thin edge before him. He could be decapitated with one flick of the stranger's wrist, and it was not a pleasant sensation.

"Give me your Pelvash notes!"

"Certainly, sir," Kris said. His voice was not loud, but it carried to the crowd outside. There were murmurs, but the people on line still did nothing. Tammulcor was used to this sort of violence by now.

"You may have the notes," Kris continued. "I don't care to lose my life." He reached toward the drawer.

"It's obvious that you need the money, or you wouldn't take such desperate measures. Of course, it's a shame that all those people out there won't be able to get the money they deserve, but—"

There was a sudden low growl from the crowd outside. They had heard Kris' words. They knew what was going on.

The man holding the psych-knife at Kris' throat turned his head just a fraction as he heard the sound from outside. That was all Kris needed. One hand hit the robber's wrist, sending the heavy knife ringing across the room. The other hand, balled into a hard fist, slammed against the man's ear.

The robber dropped soggily.

With a leap, Kris cleared the desk and landed on the back of the second man, who had heard the noise but hadn't dared turn his back on the crowd.

Kris wrenched the knife from his hand and slammed him up against the wall. The man shook his head groggily as Kris whirled him around and grasped him by both lapels of his vest.

"Now, what's the idea?" Kris' voice was oddly gentle.

Helpless in Kris' grasp, the would-be robber said, "We . . . we're longshoremen. We're out of money. No ships have loaded for a week!"

"Here! What's going on here?" bellowed a voice from the door.

Kris jerked the man he was holding, spinning him around. He grabbed an arm and twisted it sharply

behind the man's back, at the same time turning to face the door.

Two Peacemen were pushing their way through the crowd. One customer armed with a psych-knife was standing over the other robber, who was just regaining his senses.

"Come in, Peacemen," Kris said, without releasing his hold on his adversary. Then, to the customer with the psych-knife: "Thank you, friend. You may step outside; the Peacemen are here now."

The man glared at the fallen robber and then walked back into the corridor with the crowd.

The Peacemen pushed the door shut. "We heard there was a robbery here," said one Peaceman, keeping a firm grip on his thick black truncheon. "Looks like you've got it fairly well under control, though." He wagged his club at the scarfaced man on the floor. "Come with us, you; we're going to see the Uncle of Public Peace."

"Just a minute, Peaceman," said Kris mildly. "Could I have a word with you?"

"What is it?"

Kris lowered his voice. "These men are my bodyguards. We put on this little act for the people outside, just to show them that I could take care of myself."

"Oh? But why?"

Gradually Kris relaxed his pressure on the longshoreman's arm. He made no untoward move, so Kris released the arm completely.

"Well," Kris said, "I handle

quite a lot of money here, and I was afraid there might be a robbery. I know that you Peacemen have enough to do already, and a good citizen should do all he can to help, so I thought that if word got around that I was able to handle my own affairs, I'd have less trouble." He patted the longshoreman on the back. "With the boys here to back me, we won't need to take Peacemen from their more important duties."

The Peacemen were smiling. "Why, that's a very good idea," said one. "Scare the tough boys off, eh? You're very thoughtful."

"I try to do my best," Kris said deprecatingly. "Don't I, boys?" He glanced at the two longshoremen.

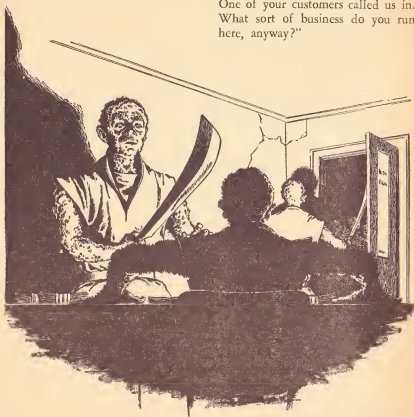
"You sure do, sir."

"Yes, sir."

The words came out as a duct.

"Thanks for coming, though," Kris continued. "It's good to see such fine Peacemen."

"We were right outside, really. One of your customers called us in. What sort of business do you run here, anyway?"



Kris smiled and explained carefully. Within three minutes, the Peacemen were carrying Pelvash money, for which they had handed over their worthless Dimay cash.

"By the way," he said when the transaction was finished, "would you mind waiting outside for my boys? It would add color if the crowd thought they'd been arrested, and if they try to walk out by themselves they're likely to get killed."

"Certainly, sir. Glad to do the favor."

When they were outside, Kris faced the two longshoremen. They looked shamefaced, and, as Kris slowly looked them over, they grew nervous.

"What's your names?" he asked.

"Bor pePrannt Hebylla," said the scarred one. "He's my brother, Bryl pePrannt."

"You look like a couple of pretty tough boys," Kris said. He paused for a moment. "If you want a job with good pay, come back here tomorrow morning."

"You mean that?"

"If I didn't, you'd be on your way to the Uncle right now. All you have to do is let those Peacemen escort you out of here."

He handed each of them a five-weight Pelvash note. "Go out and get yourself cleaned up. Take a bath. If you're not here by the Hour of Second Prayer, don't bother."

They nodded and left without another word.

Kris turned. There still were cus-

tomers waiting to be served. He kept going until it was well after dark. Then he went to the door and announced to the impatient crowd, "The office is closing now. May the Great Light illumine you."

One man stepped forward.

"I've just got—"

"Sorry," Kris said firmly. "That's all for today. Come back tomorrow, if you want to redeem your Dimay money."

"But . . . will the offer still hold?"

"Certainly," Kris said, loud enough for everyone to hear. "The offer's good indefinitely. So long as you've got Dimay scrip, I'll be offering half as much in Pelvash money for it!"

He packed the day's receipts carefully in a bulging leather case, went out the back way of the building, unhitched his deest, and rode swiftly toward the hotel in which he and Dran peDran had rented rooms.

Dran was waiting for him.

"How is it go, captain? I doesn't understand what's going on, but I does my best today."

Kris chuckled at the Bronze Islander's simplicity. "Everything's perfect, Dran! Business is wonderful!" He tossed the heavy leather case on the bed. "Watch that. He pulled a handgun from his belt. "There's my pistol," he said. "Use it if necessary. Someone might have found out where we are and decided to take the loot. I doubt it, but there's not much use taking chances."

"Where's you going, captain?"

Kris stripped off his vest and shorts and substituted a pair of common seaman's shorts, a uniform of somber black. He grinned secretively at Dran peDran. "You do your rumor-spreading by day, youngster; I'll do mine by night!"

He headed out into the Tammulcor street.

## VI

Half an hour later, Kris strolled into a tavern, looking like nothing more or less than an ordinary seaman. The tavern was full and the psych-beer flowing; it was a time of troubles, and business was good.

When he produced cobalt coin to pay for his drinks, the barkeep practically fawned on him.

"What's yours?" he asked, staring at the hard money glinting in Kris' hand.

"Psych-beer," Kris said. The bartender fetched a glass of the heavy, warm Dimay brew, and Kris dropped his coin on the bar. "Light illumine you," he said. "What's news around here?"

"May He illumine us all," said the barkeep. "There's nothing much, seaman. Just the same as yesterday."

It was the standard reply of the Tammulcor barman, ritualized, uninformative. It was social custom, nothing more. The real news would be forthcoming.

The barkeep pushed out the mug of brew and said: "There's a rumor around town that some fool is buying up Dimay scrip."

Kris grinned inwardly. He had figured that that would be the news of the day, and he had been right. It was unusual enough an event to cause comment all over town—perhaps it had even spread farther. *Fine*, he thought. *Excellent. Now comes the counterpunch.*

"Oh?" he said languidly. "Buying up Dimay scrip, eh? It doesn't surprise me at all. I'll give you one for two right now."

The tavern owner looked a little startled. "You mean that?"

Kris nodded emphatically. "Sure!" He reached into his pocket and pulled out a fistful of crumpled Pelvash notes. "Here's twelve weights. Want to give me twenty-four?"

The tavern-keeper's eyes flickered greedily. "You've got a deal, seaman." He handed over a sheaf of Dimay notes, which Kris promptly pocketed.

"That's a good profit for me—when the cobalt comes back to the bank."

He walked out, whistling.

The same thing was repeated, with variations, all over Tammulcor. Kris arrived at his hotel room much later that evening, tired and somewhat overloaded with psych-beer, but with his pockets stuffed with Dimay scrip. Things were beginning to move, he told himself happily.

"Dran? Dran, you here?"

There was no sign of the Bronze Islander. Kris shrugged and turned to the bed, where he spied a note

written on a grimy piece of paper. It took him a while to decipher Dran's near-illiterate scrawl, but finally he concluded that it was a message telling him that Dran peDran had gone out for some entertainment, and would be back later.

Kris nodded. He didn't mind a few moments of privacy at all. He walked to the closet, reached upward, and hauled out the saddlebags of his deest. Quickly, he unpacked one of the pockets.

The first item to come forth from the saddlebag was a thickly-folded wad of paper—Del peFenn's instructions on what Kris was to do in Tammulcor. Kris remembered the way Del's grizzled, fierce face had looked as he handed the instructions over.

"Here's what you're to do, lad. Scout around, try to turn popular sentiment to us and away from the Elders, and above all stay out of any fights. I've outlined some speeches you can make."

Kris leafed through the pages. They were filled with Del's usual hysterical anti-priesthood tirades, the same sort of stuff Del peFenn had been handing out for so long to people obviously unwilling to listen. Casually, he ripped the sheets lengthwise, then tore the halves a second time, and ripped what was left into tiny fragments that he sprinkled into the waste unit.

"Del peFenn," he said softly to himself, "I bid you farewell. From

now on, Kris peKym Yorgen is doing this *his* way."

The next thing to come out of the bag was a much-tattered but carefully folded sheet of paper. It was a standard seaman's map of Nidor, but it bore markings that Kris himself had made.

As he looked at it, he could picture men moving—men as well-trained and efficient as his own sailors; men trained to fight together as seamen worked together on a ship; men who could follow orders without question; men who combined the fighting efficiency of Peacemen with the co-ordination of a ship's crew.

And he saw their target: The Bel-rogas School of Divine Law.

The Earthmen had no weapons; nearly a hundred years of dealings with them testified to that. But—what of their supernatural powers?

Kris glanced at the spot on the map which indicated the Holy City of Gelusar. There was his answer.

If the Earthmen were demons, if they were simply impostors, then the Great Light Himself would aid those who fought them. Their supernatural powers would be of no avail.

If they were, on the other hand, the true Messengers of the Great Light, then Kris peKym Yorgen, self-convicted of blasphemous sin, would die.

There was no necessity for decision now; he had decided long ago. The Earthmen must go. So far as any Nidorian knew, none of them had



ever died, but there was always a first time—and that time would come soon.

He would still need Del, of course. It was Del's money—his private fortune plus the money he had solicited and wrung from the merchants and scamen for fourteen years—that was being spent in this effort to bolster the economy of Dimay and bring it under control of the Merchants' Party.

Kris looked at the map again and smiled grimly.

*No, he corrected. Not under the control of the Merchants' Party.*

*Under the control of Kris peKym Yorgen.*

The Council of Elders had been led astray; it would take a man who could see clearly to bring them back to their senses.

Beyond the fighting men, he could see another scene—a hundred or perhaps a thousand years in the misty future. A time when Nidor was as it should be, as it had once been—quiet and serene, with each following the Law and the Way of the Ancestors.

And perhaps—perhaps—the name of Kris peKym Yorgen would rank high, near the name of his Ancestor, Bel-rogas Yorgen, the Lawyer. Perhaps it would be—Kris peKym, the Exorcist.

Kris shook his head as though to clear it. The psych-beer was giving him delusions of grandeur, he decided.

He sketched idly in the margin of his map, thinking. Norris had

told him strange things about the Earthmen—about their secret city in the depths of the Mountains of the Morning, the city which only a few Nidorians knew was there; about their unfathomable schemes, and devious craftiness.

Kris was not sure how true all these stories were. But the facts spoke for themselves. Since the coming of the Earthmen, Nidor had undergone change.

*Ergo, the Earthmen had done something to Nidor.*

Conclusion: drive the Earthmen off the planet.

It was a concept he had broached unsuccessfully to Del peFenn. Del, with a merchantman's dislike for the priesthood, had been far more interested in going after the Elders than in bothering with the remote and incomprehensible Earthmen.

Kris licked his lips reflectively and peered close to the map. *If we approach from the west, he thought, we can by-pass Gelusar and still wipe out the School. Yes, that ought to do it.*

Del would kill him if he knew Kris was planning any such maneuver on his own hook. But Del was safely up there in Vashcor, and Kris had the situation completely to himself down in Tammulcor.

*But I need an army,* Kris thought. He stood up and glanced out the window at the straggling wanderers in the street below.

Tammulcor was full of bewildered, unhappy people looking desperately for someone they could put

their faith in. *What better material for my army?* Kris thought, with savage glee.

During the next few weeks, Kris began to feel almost as though he was a disembodied spirit. He was detached from reality, watching what was happening in Tammulcor without actually being a part of it. It was an odd feeling for a man who was accustomed to shape events around himself.

For one thing, the money-changing business dropped off sharply. People no longer seemed willing to make the two-for-one exchange.

Kris kept close touch with what was happening in the troubled city. Combining business with pleasure, he adopted his role as ordinary seaman and went the rounds of the taverns again, saying nothing, simply standing to one side and observing.

At one place, he watched a small-time merchant enter and order a brew. The merchant, a chubby, surprisingly cheerful little man, stood around a while, and then said to the bartender:

"Have you got any Dimay notes about? I suppose you've thrown most of them away, but if you want to get rid of them for cash, I'll—"

"Forget it," said the barkeep crisply. "Dimay money is just as good as any other, these days. I'll take *your* Dimay notes, if you have them."

A flicker of surprise passed over the merchant's face. "But they

aren't backed by cobalt! They're worth nothing whatsoever!"

The tavern-keeper grinned toothily. "Oh, so? Then why are you willing to pay for them?"

There was a moment of silence. Then the merchant smiled and shrugged without self-consciousness. "You're on to it, then. Well, it was a good racket while it lasted. For nearly a week, I was getting two and a half weights Dimay for one weight Pelvash."

"Sure," the barkeep said. "And at the same time, this Kris peKym Yorgen was offering two for one. And he isn't getting any more offers these days either."

Kris finished his drink and strolled out into the street. He had heard all he wanted to hear. It had worked! By offering a false backing to the notes of Dimay, he had made them worth something again. And as long as he wanted to, he could control the situation.

The net was starting to tighten. Even at this moment, Dran peDran was busily spreading another rumor. The people of Tammulcor were learning that the reason that the Council had held up replacing the cobalt in the Bank of Dimay was because the Earthmen had ordered the Council to stay away from the whole affair.

Dimay money was hanging in abeyance—and, for the time being, it had recovered its old value.

Three weeks after his arrival in Tammulcor, Kris was sitting in his

office—alone. No one had come in to have money exchanged in the past two days. Why should anyone, when Dimay money was again on a par with Pelvash? But Kris was expecting company at almost any moment. A third rumor had gone fluttering through the town.

He didn't have long to wait. A visitor arrived not much past mid-meal.

"Come in," Kris said sharply.

"I am Venk peDor Ghevin," said the man who entered. He was short and heavy, with something oily about his appearance. "You are Kris peKym Yorgen?"

"Correct."

"I am in the jewel trade. I understand you are offering one Pelvash weight for each two Dimay notes. Is this true?"

"No longer," Kris said. "I've just received word that the Earthmen have ordered the Council not to back the bank, as they were intending to. I'm sorry. Dimay money no longer has value."

The jeweler's face became bleak with disappointment. "I'm sorry, too. I had hoped you wouldn't confirm the bad news that just reached me—but you have. I've lost a great deal on this trading of notes if nothing comes through."

Kris leaned back in his chair and eyed the little jeweler with what he hoped was an expression of deep sympathy. "It's a nasty situation. But save your notes, Venk peDor. When I speak to the Council again, I may be able to convince them that

they should go against the Earthmen's wishes. If so—and I see no reason why I should fail—you may redeem your notes with me."

"I see," said the merchant, making an ineffectual attempt to conceal his astonishment. "Very well, then." He bowed politely and left.

Kris chuckled warmly when the jeweler departed. *A big lie, he thought happily, is always worth a dozen little ones. If it's implausible enough, they'll always swallow it.*

Four more merchants swallowed it before Kris was finished for the day. Again, word began to travel through the city. Gradually, people were getting the idea Kris wanted to impart—that he was a powerful man who could swing the currents of currency virtually at a whim.

By nightfall, he was ready. If everything had worked out right, Dran peDran should have started his riot by now.

## VII

The warehouse of Nibro peDom Lokness, owner of the Tammulcor Baker's Merchandisery and leader of the Baker's Guild, was an imposing building at the upriver end of town. As Kris peKym rounded the corner that led to the warehouse, he saw there already was a mob of rioters on the scene. Flickering torches cast a red gleam over the building's walls, and angry shouts arose.

"Where's Nibro peDom? We want bread!"



"We want bread!"

"Bread!"

Kris slipped into the shadows and watched as the rioters hurled stones and imprecations at the massive warehouse. The sides of the building were beginning to blacken with smoke. Tension was accumulating in the hungry mob.

He nodded to himself. Tension. That was the key: set men in conflict, draw the net of tension around them, tighten. They react blindly. They can be led. They can be manipulated. Coolly, levelly, Kris peKym

calculated the dynamics of the mob before him, and wondered if Nibro peDom would make his appearance before the anger of the mob surged over and caused the destruction of the warehouse. He hoped so.

Nibro peDom did not disappoint him. He appeared suddenly at the door of the beleaguered warehouse, with three Peacemen standing at his side.

"What's the trouble here?" the bread merchant demanded, in an angry voice. Nibro peDom was wealthy-looking, sleek and well-fed,

and he did not seem to be afraid of the mob.

"Give us bread!" someone shouted.

"Bread?" Nibro peDom asked. "You want bread?" He shrugged. "Bread costs money to produce, my friends. Give me money, and I will give you bread."

"All we have is Dimay money!"

"Worthless," Nibro peDom replied. "Mere paper. Eat *that*, if you like."

"But you took Dimay money last week," roared a burly man in the front who had appointed himself spokesman.

"That was last week," the merchant said evenly. "Last week, the stranger Kris peKym Yorgen was redeeming Dimay money. This week he refuses. Dimay money is worthless!"

"If you won't give us bread, we'll take it!" yelled a high-pitched voice. "Let's break in!"

The crowd began to surge forward uncertainly. Kris waited just a moment, until they had a reasonable chance to approach Nibro peDom, and then leaped out of hiding and stepped between the merchant and the mob.

They kept coming. The big man who had been spokesman barreled into him, and Kris hurled him back against a mass of shadowy bodies. Someone's fist struck him heavily; he grunted and returned the blow. The Peacemen behind him waded into the mob as well. Kris ducked under them and jumped up on the

steps of the warehouse, next to Nibro peDom.

"*Hold everything!*" he roared, in a voice that could be heard blocks away. "Stop fighting!"

"It's Kris peKym," someone's astonished voice said.

"Yes! It's Kris peKym." He held up his hand for quiet, and gradually the threshing mob settled into an uneasy calm.

"What's the trouble here?" Kris asked, turning to the bread merchant.

"These people want bread," Nibro peDom said. "And they offer Dimay money for it."

"So? What's wrong with Dimay money?"

"Nothing backs it," Nibro peDom said.

Kris laughed and turned to face the mob again. "This breadman says he won't take your money. All right; there are other bread merchants. Go somewhere else. But tomorrow, when you come to my office—I'll redeem your Dimay money again!"

An audible gasp swept through the mob. Kris glanced at Nibro peDom again. The merchant suddenly looked terribly flustered and confused. He stepped close to Kris, and whispered a few words in his ear.

Kris turned to the mob once again. "All right, Nibro peDom says he'll sell you bread—*tonight!*"

A roar of enthusiastic approval went up from the crowd. Kris smiled in satisfaction and whispered to Nibro peDom, "You can exchange your money tomorrow at my place—if you want to."

As he had assumed, only a few people showed up the next day, and none of them were there to ask for money. They were merchants. Among them was the baker, Nibro peDom Lokness.

There were eight of them, ringing themselves in a little semicircle around Kris' desk. They tried to look grim, although their faces betrayed more puzzlement and consternation than anything else.

Nibro peDom stepped forward to act as spokesman. He maintained a stern expression as he spoke, but there was respect in his voice, and he used the proper form of address to a superior.

"Old One, we have come to ask what is being done about the state of the moneys of Dimay. We have asked our priests, and they tell us nothing. You seem to know, so we come to you."

"Sit down, my friends," Kris said smoothly. "Care for some beer?"

The businessmen arranged themselves uneasily in the chairs against the wall while Kris brought each of them a foaming mug of brew.

When they had each taken a thirst-whetting sip, Kris leaned forward, his elbows on his desk. "Can I trust you gentlemen?"

They glanced at each other, and then all eyes focused on Nibro peDom. The baker said: "You can trust us."

Kris opened a drawer of his desk and took from it two books—the Scripture and the Law. They were

bound together, as was customary, by a cooper band.

"I must ask each of you to give his word, bound by a promise to the Great Light, that you will not reveal to anyone else what I tell you today."

*Make it impressive, he thought. The more impressive it is, the deeper it'll sink in.*

He held out the book. After a moment's hesitation, Nibro the Baker took the double volume and held it to his forehead.

"May the Great Light witness that I, Nibro peDom of the Clan Lokness, give my word that whatever is told me in this room will never pass my lips unless I am released from my oath by him who tells me."

Solemnly, each of the others went through the same rite.

When they had finished, Kris said: "The truth is this: The Earthmen have brought destruction upon Nidor. It is they who control our destiny—and the Council of Elders is powerless. If we are to return to the Way of our Ancestors, we must thrust out the Earthmen."

Nibro peDom slapped his hand to his leg. "That's *exactly* what I've thought all along! I've . . . I've been afraid to voice it openly, but—"

One of the other merchants rose. "I'll wager the Council *wants* to replace the stolen money, but the Earthmen won't let them!"

Kris nodded. "Thus far, my influence with the Council has held off the desires of the devil Earthmen,

but I can't hold off much longer without help."

"What sort of help do you want?" Nibro asked.

Kris gestured with his hands. "We have to go to the aid of the Council," he said. "The Council *needs* us. Under the influence of the Earthmen, they're helpless. They have been unable to appeal to us—the common people. We must back our priesthood and throw the Earthmen off Nidor!"

He felt a fever of excitement course through him at this first public declaration of the doctrine he had held so long. *If Del could bear this!* he thought wryly.

"You say the priesthood is controlled by the Earthmen?" asked a small merchant in the corner.

"Of course," Nibro peDom said scornfully. "It's obvious, isn't it?"

Kris nodded. "We either help the Council against the Earthmen or we will be destroyed."

"Do you have a plan?" the baker asked.

"Of course I do," said Kris. "But I want you to think the matter over before I tell you what's in my mind."

They turned to one another, and a hushed buzz of conversation flowed from the group. Kris knew what they were thinking.

Here, they thought, was a man who knew when money was good and when it was not. He was a strong man, a man who knew how

to lead. He was a man who knew what was good for Nidor.

Nibro the Baker turned to him and said, "We're with you, Kris peKym. We'll follow where you lead."

He could barely keep from jumping with glee. He could see the towers of the Bel-rogas School bright with flame even now, and old Del peFenn blustering with impotent rage as his young disciple single-handedly drove the Earthmen from the planet.

Kris glanced from one man's face to the next. They were angry, impassioned-looking men. They would follow his orders. He had them in his hand, now.

*Here's the nucleus of my army,* Kris thought. *We'll start organizing at once—and march on Bel-rogas!*

He rubbed his chin thoughtfully, wondering just where he should begin to outline his plan to his eight merchants. But just as he was about to speak, he heard a rapid, excited knocking at the door.

"Just a minute," he said, frowning. He crossed the room and threw open the door.

A tired, bedraggled-looking man stood there, his body hair gray with road dust, swaying wearily, seeming as though he would collapse at any moment.

It took Kris a moment to recognize him. When he did, his voice was low and hoarse with astonishment. "*Norvis!* What's happened? What are you doing here?"

The Secretary coughed, as though the dust were not only clinging to his skin but to his lungs. "Step outside a moment, Kris."

His mind a frozen blank, Kris followed Norvis out into the hall, ignoring the puzzled glances from the merchants within. He grasped the smaller man by the shoulder and whirled him around to face him. "What's going on, Norvis? Why are you here?"

Norvis seemed to gasp for breath. "We need you. We need help, and

you're the only one who can give it now."

"We? Who's *we*? What are you talking about?"

"Del peFenn's daughter and son—and I. We had to flee Vashcor; someone is after our lives!"

Kris blinked unbelievably. "Your lives? What about Del?"

Norvis peKrin's face became bleak. "Del peFenn was murdered two days ago. Shot from ambush by a rifle. We don't know who did it."

TO BE CONTINUED

## IN TIMES TO COME

The lead-off next month will be "Call Me Joe," by Poul Anderson, with a cover by Kelly Freas.

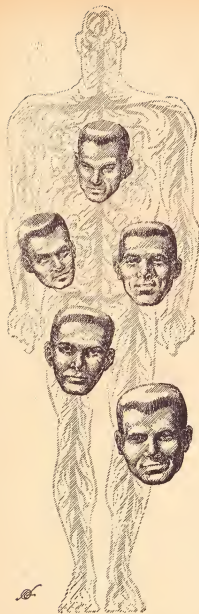
You know, basically Man has an extremely provincial attitude toward life; he insists on breathing oxygen, when anyone who knows anything about the Universe knows that oxygen-containing atmosphere is about the rarest thing in Reality. Only the little hick planets have it; the big planets all go for the methane-hydrogen-ammonia style. And 99.999999% of the Universe minimum has no atmosphere whatever.

Poul Anderson has a fascinating suggestion on how to achieve a somewhat more cosmological viewpoint on How To Live . . .

Without bothering to calculate it out, it's my guess that Jupiter alone has more surface area than all the other planets combined. It's just our narrow, provincial prejudices, insisting on breathing oxygen, and low gravity, that stops us . . .

THE EDITOR.





## HOW ALLIED

*"George" was a queer sort of person—because he wasn't unless they were, but they didn't have the powers George did, and the whole thing didn't make sense—but did most remarkable work!*

BY MARK CLIFTON

Illustrated by Freas

*Remembrance and reflection, how allied,  
What thin partitions sense from thought divide.*

*. . . Pope*

Occasionally, in every personnel man's life, there comes a day when there are no pressing problems. Perhaps out of sheer boredom with perpetual squabbling, all the workers and department heads at Computer Research were giving their attention to getting some work done for a change. Even Old Stone Face—Mr. Henry Grenoble, General Manager—hadn't bothered me for a day or so about how much less

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dependable people were than machines, and why wasn't I doing something about that? The lull gave me a breather.

I was sitting at my desk, experimenting with my little psi machine, when Sara, my secretary, stuck her head through our adjoining door. She looked my little gadget over, looked at me, and stepped all the way into my office.

"Your retrogression to childhood seems to be progressing nicely, Mr. Kennedy," she said in that dry, flip manner she affects, or really feels, with me.

"This is a psi machine," I instructed loftily. "Good for testing psi force. Works better for some than for others. Follows Rhine's card-calling patterns, works better for the first few tries than later in the run—sometimes. Sometimes the other way around, just to keep us confused."

She grinned at me and tossed her shoulder-length bob of red hair in the latest movie queen gesture. But no matter how hard she tried, her face could not assume that expression of vacuous idiocy men are supposed to find irresistible.

"Maybe we could find out how strong your psi force is, Sara," I suggested. "Want to try?"

"I'll stick to tea leaves," she answered. "Or maybe take a course of lessons from that fake Swami you hired last month."

"That fake Swami is doing all right," I answered her back. "Or as well as might be expected. Now

and then he does activate some Auerbach psi cylinders."

"Just so we don't all go overboard," she murmured, and looked pointedly at my gadget. In spite of her overtones of disdain, I knew she was interested.

"Sometime, in the deep privacy of your apartment, where you don't have to maintain your sophisticated dignity, you might like to try this little gadget," I said seriously. "Take a piece of cardboard, draw a clock face on it, stick a pin up through the center. Cut a small arrow out of ordinary paper and balance it, without piercing, on the pin point. Think of a number on the card, and if your psi force is anything to brag about the arrow will swing around and point to that number. It's very simple, anybody can make one."

"Of course the air currents in the room have nothing whatever to do with swinging the arrow around," she scoffed. Still, she did come closer and perch herself on the arm of the crying chair—the chair that looks comfortable but actually slants a little so the sitter slowly slides outward, a gentle hint that even the most enjoyable grievance or calculated hysterics must come to an end sometime.

"Sure," I agreed. "The point is the arrow goes to the right number too often for random chance."

Sara surprised me, and shouldn't have because I knew she was a bright girl.

"You sit there thinking at that little thing," she said, and gazed

out of my window at the long cement wall of factory building number three. "Air currents move it around. It hesitates at the wrong number, so you go on concentrating. Finally it gets around to the right number and wham! You score a hit. How can you lose?"

"You want to go out and find a nice soft tree crotch to sleep in because investigating the idea of a cave is too radical?" I asked sourly.

I shoved the little gadget over to one side of my desk beside another one that had, instead of numbers, the brief answers to questions written on it. Such as "Yes," "No," "Tomorrow," things like that. In a fit of whimsy I'd filled in one space with "Don't do it, Ralph!"

"What did you want, Sara?" I asked with one more glance at the psi machines. "You didn't come in here just to browbeat me."

"There's an applicant by the name of George to see you," she answered.

"George? George Who?" I asked, automatically.

"Just George," she shrugged. "That's all the interviewer told me."

"What's the matter with the interviewers? Why can't they talk to this George? Why should I have to take my attention away from important things—"

Her eyes swiveled over to my psi gadgets, and she couldn't help grinning.

"All right," I agreed. "Maybe not so important, but how are we to know? Anyway, why should I interview raw applicants when we've got

a whole staff for that purpose?"

"This George seems to be something special, and you gave orders that you, personally, wanted to see anybody with—anybody like that. Who knows? Maybe you'll turn up another fake Swami, or another little poltergeist girl like Jennie Malasek."

I looked at her, grimaced wryly, and sighed.

"Not again," I said. "That was when the heat was on from the Military. They've cooled down now, and so have I. I've had my fill of screwballs. I—" I sighed again at her patient certainty I'd see the applicant as soon as I'd grumbled enough. "All right," I agreed. "Send him in. If the interviewers can't handle him, well, I'd better do something to keep from asking myself on the way home, 'And what bright hope did you give to the World today, Ralph Kennedy?' Send him in."

"Yes, sir," she said formally, and stood up. She still says "sir" to me now and then. I'm never sure it is respect, derision, or just an old habit hanging on from young and hopeful days when she dreamed of being secretary to a dynamic tycoon of industry. Was it ever possible she might have thought the Director of Industrial Relations at Computer Research Corporation was a dynamic tycoon? If so, I may have let her down.

While she was out of the office I started to ditch my psi machines into a desk drawer, then decided to let them stay. After all, it was only

an applicant I'd be interviewing.

"Is George going to be something special—more trouble?" I asked the answer machine. The arrow pointed to "Yes." This was not so remarkable, since the arrow had been pointing there before I'd asked. I could make precognition out of that if I wanted to.

I lit a cigarette.

My door opened again to gust the number arrow off its moorings and send the answer arrow swirling around. Five young men came in, single file, through the doorway. Behind them Sara was making signs with her eyes and shoulders that she hadn't known it was to be a convention. She made wide eyes, and closed the door.

At first glance they were easily classified as fresh, young college grads. A couple were big and bulky, a couple were medium and one was a wiry little guy. They were assorted blondes, brunettes and betweens. Each had two eyes, a nose, a mouth, and assorted ears. They didn't exactly have the trade-mark, "Made At Stanford" stamped on their foreheads, but it was pretty apparent they'd all been turned out by the same mass production education machine.

I waved to conference chairs grouped together over in one corner of the office.

"Have seats, fellows," I said.

They all sat down, as close to one another as the chairs permitted, as if to draw reassurance and warmth

from one another. Their movement was just enough off beat not to be the precision of a drill team. I sighed silently. Young Grads always made such a big thing out of a Job Interview. I hoped I wouldn't be a disappointment to them.

"Before we begin," I said, and put a little of the classroom lecture tone in my voice to make them feel at ease, "I should check you fellows out on something. It's a bad idea to go job hunting in a gang, or even in pairs. When you become adult you're supposed to be able to walk into an office all by yourself, without your gang to hold you up. All right, which one of you is looking for work? Which one is . . . er . . . George?"

They looked at one another with something like a secret smile, then they looked at me. And there was pity for me in their faces. That was normal enough. The young grad naturally assumes that no one, before his time, ever cracked a textbook, or even learned how to read. And at that time I was still secure enough in my mature ascendancy not to realize I might need their pity.

"Sir," Chair Number One said boldly. Then his immaturity got the best of him. He gulped and swallowed. But the sentence wasn't interrupted, because Chair Number Two picked it up without a pause.

"Word has got around that this company hires oddballs!" He used the term with a certain pride, then felt he should define it for me. "People with unusual talents."

I made a wry grimace.

"I hope such word doesn't filter through to Management," I said ruefully. "I've got enough troubles already."

"You should be proud of it," Number Four, the wiry little guy spoke up. "Unusual achievements require unusual people!" Somehow I could picture a framed motto of those words hanging on his study wall. If so, it would be a cultural step forward from Kipling's "If."

"Let's get down to cases," I said. "What's the pitch? Which one is George?"

"We're all George," Number Three said. Their little secret smile was more apparent now, and had a touch of delight in it.

"Great," I answered dryly. "A valuable asset. Just what industry needs. Your first names are all George."

"Not exactly, sir," Number Five said, as if he wished I weren't quite so slow in comprehension. None of our names is George. That's just the name we adopted. He's the only one who really counts. You might say he's the sixth one of us, only that wouldn't be quite right."

"Oh," I said, and began to realize why the interviewer had passed these guys on to me. "There's a sixth one, and he's the only one who counts. All you fellows are just here to pave the way for his interview. Must be quite a man to get all you fellows to strew rose petals in his path."

"You're close," Number One said, and his grin grew wider.

"Closer than you know," Number Two agreed.

"Although you couldn't accurately call him a man," Number Three qualified.

Numbers Four and Five nodded approvingly.

"All right, guys," I said. "I know when I'm getting the needle. But this is your job interview, not mine. I've already got a job, such as it is. It's up to you to make the pitch, not me. So trot on out and tell George to come in and speak for himself."

"George is already here, Number Four said.

"He's been here all the time," Two agreed.

"Certainly," One said. "Otherwise this conversation wouldn't make sense."

I felt the first twinge of uncertainty. It wasn't making any sense to me—and it was, to them. They were quite serious, too. I bit down on my lower lip, and glanced over at the psi machine. The arrow was pointing to "Don't do it, Ralph!"

Somehow it failed to satisfy me. Don't get mad? Don't throw 'em out? Don't talk to 'em any more at all? Don't pass up this wonderful opportunity? Nicely ambiguous, it could mean anything.

"Maybe you fellows had better start explaining," I said mildly. I wasn't taking the lead in the interview any longer.

"Sir," Two said, and appeared ready to launch into a prepared speech. "You've no doubt noticed that individualism is being replaced in our times with collective effort, teamwork, group activity?"

I nodded affirmatively that I had noticed it. I'd also observed something else just now. Number Two had started the sentence, but Number Three had finished it. The switch was so smooth that I hadn't quite noticed just which word had been used as the pivot.

"I've got some reservations about group effort," I said, and pretended I hadn't noticed the switch. If it were a gag, I wouldn't give them the satisfaction of being impressed with their drill precision. "I've noticed a group can better develop an old idea, but it still takes an individual to come up with a new one."

They looked at me with pity again. I was in my late thirties, and to them doddering with age. Their faces showed they thought I was ready to turn out to pasture. Suddenly I remembered reading about experiments of free-wheeling idea association groups and the remarkable new ideas that came out of it. Maybe they were right, maybe I was doddering and should be turned out to pasture. But apparently they somehow agreed among themselves to overlook my lapse which had definitely placed me in a former generation.

"And have you observed," Number Four smoothly picked up at the point where I'd inanely interrupted,

but he transferred the rest of the question to One, "That sometimes a group or a crowd seems to take on a definite mass Personality?"

"Theater entertainers talk about—"

"A hot audience or a cold audience. Rabble rousers can make—"

"Some audiences turn hand-springs, and fall flat with others. In a mob—"

"Something seems to take possession of the people, causing—"

"Them to do things they wouldn't dream of doing as separate individuals. Or you take a delinquent gang in a no-reason assault. Afterwards, they don't seem to realize what they did, or why they did—"

"It. Some kind of an interplay and mental feedback takes place, transforming the mental current into a palpable power—"

"Something seems to come into being—"

"A mass entity—"

"A thing—"

"A personality—"

"A being—"

"It exists, and the people in the mob or group are just its parts, its extensions, its senses, hands, feet, eyes, ears—pseudopods!"

"Well, sir, our entity is—"

"GEORGE!"

They all sat there, beaming at me, pleased with themselves—or pleased with George. They seemed to realize I needed a moment to absorb what they had told me. And I did. I was trying to figure out what kind of a con game they were trying to pull.

It wasn't anything vicious. I was pretty confident of that. I'd seen my share of angel-faced sadists, but these kids were fine lads, I'd bet on it. I found an explanation which seemed rational.

It was what they'd call an interest catcher. Their vocational counselors would have given them the same old line, "Now when you go out to look for that very special niche in life you deserve, you've got to think of something special, something to catch the employer's interest, make him see you as a person instead of just another applicant." It was a good theory, and sometimes it worked. They'd tried. They'd offered something very special, with drilled precision that must have cost many hours of rehearsal.

But this time it had failed, because I didn't see them as individuals at all, just as a group. I didn't even know their names, or care to know them. One, Two, Three, Four and Five was quite good enough. So their con game, innocent and harmless but still a con game, had failed.

Or had it? Was that the whole point? That they didn't want me to see them as individuals, but only as a group? A group called George?

"These ordinary mob entities," Two began the conversation again, but the phrases were tossed from one to another like a basketball. "Are just flash existences. They come into reality for a while, and then they don't exist any longer. After they go they leave their pseudopods, the people involved, bewildered and

ashamed if the entity was an evil thing which made them do evil deeds. Or, if it was something good, like a music jam session, or a football rally, or a panty raid, or maybe just a quiet talk about what is life, then the people remember it. They remember it as one of the deep and lasting experiences of their lives, they long for it to happen again; like army buddies who have been under fire together there's a kinship deeper than blood, they never forget, they get together again and again trying to make the entity come alive once more so they can enjoy, really enjoy, living in the fullest sense."

All of them had contributed to the speech, but I found it easier to follow the thread of their argument if I half closed my eyes and made no effort to keep track of the rapid shunting of the conversational ball from one to the other. Ridiculous though it seemed, it was easier to accept George as the real entity and these lads as merely his parts, than attempt to keep them separate; easier to conclude it was George speaking without any discrimination as to whose mouth he was using.

"We've been together ever since we were kids living in the same block," they said, or George said, and I gave up trying to make that distinction, too. "We grew up together. It got so our parents hardly knew which of us was whose. We've always stayed together, even managed to keep in the same company during our six months military hitch. We don't remember when George

came into being, when we stopped being separate boys and all became a part of George. Other entities, bad and good ones, come and go; but as long as we can stay together, and we will, George stays with us.

"So we think there ought to be some kind of a job in your Company for George—"

"Something that five unconnected guys couldn't do, but George could do—"

"Something unusual—"

"And as long as you hire oddballs anyway—"

"Well, unusual achievements require unusual people!"

I wasn't buying any of this, of course. It was clever, and marvelously executed. I was intrigued in spite of my years of being subjected to the tricks the brighter applicants could dream up. And of course it would all fall to pieces if I switched the conversation onto a subject they couldn't have rehearsed in advance.

Yet I found myself reluctant to do that. I liked these kids, and behind my expression which I hoped was noncommittal, I was applauding them. If anybody ever deserved A for effort— I'd long ago realized that an applicant didn't stand a chance if I really wanted to take him apart, that my years of experience with every kind of a human dodge and gimmick made it like turning a machine gun on a kid with a toy bow and arrow. Unless something vital was at stake, I usually let people get away with their carefully contrived frameworks simply because

destroying them would give me no pleasure.

But I was intrigued beyond this point with these kids.

What if there really were a George? Of course there wasn't, but what if there were? They'd made a powerful case for his existence, and the idea of a superentity would explain much in mass psychology heretofore unexplainable. The more we learned of electronics the more we were realizing that through interplay and feedback, impalpable force fields were brought into being which had measurable effects—effects impossible to any one of the machines contributing to the whole. The echo effect in a broadcasting studio was a rudimentary example.

Yes, what if there were a George? Why didn't I feel him, if there were? Because I was not one of the parts? Because, like a spectator standing off from a mob scene who looked with incredulous wonder upon their behavior, I could only see the effects from the outside? I felt a twinge of envy, for like everyone else, I, also, in fleeting instances, had known a sense of "belonging together." The thing the Gestalt school was trying to develop.

"What a basketball or hockey team you guys would make," I said. "Imagine a team where every member was completely in tune with every other member, the whole acting as one co-ordinated entity."

"That's the idea, sir," one of them said. But their faces told me



of their disappointment in me. Their idea of something for George to do went far deeper than winning some sports events. George was real, George was earnest, and the gym was not his goal.

"Or a music jam session," I said. "Wow!"

They sat politely and waited.

"Mind you," I said, "I'm not convinced of George, but on the hypothesis that he could exist, there must be dozens, hundreds of things, things we've never been able to do in industry or science because of imperfect communication and coordination."

Their faces brightened. At last the old guy was getting down to something solid.

But I was stopped right there. There must be dozens, hundreds—But at the moment I couldn't think of any. Very well, Kennedy, do what you always do with an applicant. Find out what he is trained for, what he can do, then it is simple to fit him in to what you need done—if he qualifies.

These boys qualified, there was no doubt of it. In spite of their closeness, they hadn't taken the same courses in school. One was a mechanical engineer, one an electronics engineer. Another had specialized in cybernetics, and that fitted neatly because our major line was making computers and mechanical brains for hush-hush missiles and so forth. A fourth one had specialized in production control, and the fifth one in industry procedures, such as

accounting, purchasing, supervision, organization, things like that.

They were qualified. Everyone of them was an ideal trainee.

But it still gave me nothing for George to do! There were a lot of unformed ideas teasing me just back of mental consciousness, and a considerable self-disgust that I couldn't put my finger on anything specific. But, there it was. Given time, I'd no doubt think of something. I didn't want to lose these lads while I thought it over. I'd have hired them like a shot if they'd come in separately, so why let them go on to some competitor while I mulled around trying to dream up something for George—who didn't exist anyway?

I launched into my young grad—industrial trainee speech, all about the need for converting knowing about things to doing them, the necessity for taking a beginning place while they learned the ropes. While they were learning, we would be observing them, finding out where they would best fit in our total organization, et cetera, et cetera. The same old line each young grad accepts cynically because there is nothing else he can do.

A little to my astonishment, they accepted enthusiastically. That was the idea. They realized that it was too much to expect something unusual for George right away, that like any other new employee, George would have to prove himself before he could expect anything of importance.

I was further astonished that the menial jobs I described for them didn't insult them. Usually a young grad's idea of starting at the bottom means Assistant to the President.

I called in the interviewer who had shunted the boys on to me, and told him to process the lads for the trainee jobs, the three engineers as draftsmen in their respective fields, the production control man as a stock chaser and expeditor, and the business administration lad as a clerk in the purchasing department.

These were the open jobs, and it should be obvious to any interviewer that these were the lads to fill them. The interviewer looked at me with mingled emotions. Part of him was asking "How do you do it?" with admiration, and the other part was sore at me because I had been able to do it, when all he'd got was irrational confusion.

I failed to reveal that I was also somewhat irrationally confused.

I had never run a personnel department on the usual policy of forgetting your promises as soon as you saw the back of the employee. One of the reasons we had so little organization trouble was because they knew that if I failed to keep my promise it wasn't because I hadn't tried.

In the days that followed, I tried to find something for George. I talked to various supervisors whose intelligence I respected. I went to administrative engineers. I threw the problem into the theoretical re-

search lab. Everyone had the same reaction.

"Why sure, there must be dozens, hundreds—"

"Name me one, just one," I'd say. "Name me something that theoretically we know how to do, but can't do, because we can't ever get the perfect co-ordination and communication to meet unforeseen developments."

Of course they accepted my statement that this was just a hypothetical situation. I wasn't sticking out my neck any farther than that. But it was an intriguing thought, and the more imaginative engineers pounced upon it with delight. Why there must be dozens—

Name one, just one.

And they did name problems by the score. But these always fitted into one of two categories—either science didn't yet know how to solve the problem even with perfect communication and co-ordination, or it was only a little better performance than five separate guys could do without complete empathy. Never anything that only a George could do, a thing that couldn't be done without a George.

Some of them tried a different approach.

"Tell me what qualities George has, and then it should be easy to think of something that only he could do."

I learned to counter that one, because it led into endless discussions about qualities of mind, and never



produced anything specific for George to do anyway.

"Give him any rational qualities you want," I'd say. "Anything that fits into our present framework of science and industry. Let's don't deal in magic, or this time in the usual concepts of psi. Here we've got five guys, who are just ordinary guys without any wild talents. But they've worked out Gestalt empathy to the point where they think and act as a unit, as one organism. Now, granted this organism as a whole may equal more than the sum of its parts, still it doesn't have any wild talents. It can't turn the Auerbach cylinder into an antigravity unit, for example. But it *is* greater than the sum of its parts, it *is* more than just five well-trained guys who would bog down in confusion as soon as an unforeseen circumstance arose, who would have to stop whatever they were doing to compare notes and agree on where to go from there. This . . . this George, would react instantly, drawing his decision from the combined minds and talents of the whole group, and all parts of the group would carry out the decision just as if they were parts of one body directed by one brain. Give him any background, any training, any knowledge, any rational qualities you like. What good is he? What could he do that we can't already do?"

They'd grin and mumble something about if I didn't have anything more important than that to occupy my time they certainly did.

They'd agree to think about it, because, like myself, just behind the frame of consciousness there was the teasing certainty that there must be dozens, hundreds—

That, in itself, intrigued me. Was man evolving into a kind of group entity, instead of separate individuals? Some philosophers had said so. The whole social structure was trending that direction. Were we on the verge of a whole new concept of mind and existence? Something we could intuitively feel but not put into words?

It became important to me, far beyond the importance of merely keeping my promise to think of something for George to do, my promise to the five lads. The five boys had settled into their new jobs without a disturbing ripple on the surface of the organization, and a couple of supervisors had gone out of their way to tell me that if there were any more of the same floating around to grab them.

One supervisor said it was astonishing the way his man seemed to grasp total orientation in his job, seemed to know without being told how the work he did fitted into the total structure. He thought this very unusual, because it usually took months or years for the concept to dawn that each job fitted into the pattern of all other jobs, like a big jigsaw puzzle.

I agreed that it was unusual. And felt a chill run down my spine. It wouldn't be unexpected if what was being taught the other four

trainees was instantly available to him! Where did empathy leave off and telepathy begin?

I went beyond my usual conversations with the engineers and theoretical scientists. I even thought of taking the problem to Old Stone Face, and then got the practical thought that the general manager would flay me alive for wasting time on a hypothetical problem when there were so many real ones to solve—such as how to make people behave like machines.

I did take up the problem, tentatively, with Colonel Backhead. Along with other private industries working on hush hush government contracts, we had our contingent of Army-Air Force-Navy personnel, who acted to interpret contracts, pass on plans and specifications, inspect output, needle the Security police into ever increasing suspicions of everybody, stamp Top Secret on every piece of paper they saw. An organization within an organization. "A cancerous growth in the body of free enterprise," Old Stone Face would mutter when he was particularly perturbed by some foolish regulation.

Still, I'd got to the point of desperation, I'd even accept an idea from Colonel Backhead, if he had one. He did, and it astonished me.

"Good thing such a thing doesn't exist," he said in his clipped, raspy tones. "Rob a bank too easy."

Now what kind of a subconscious mind did *he* have?

Repeated failure and time dulled my enthusiasm for the quest. Other wheels were squeaking louder than my five lads; Company wheels, and Military wheels.

A certain realization also dulled my search, and faced me with defeat. Both industry and science are founded upon the basic premise that there *cannot* be perfect communication and co-ordination between individuals. The procedures are all set up to compensate for that lack. Deeper still, like any hypothesis founded upon a basic premise that is unquestioned, all theories and questions are shaped by that premise, and all evidence is rationalized to fit it—like the wondrous structure of astronomy built around Ptolemy's basic premise that the Earth was the center of the universe. It takes a complete breakthrough, a destruction of the basic premise, before we can think of the questions, much less arrive at answers.

I would have to be a Copernicus to think of something for George to do—and I wasn't.

I salvaged my conscience over the broken promise to the five lads by rationalizing that this betrayal was no more than any other young grad could expect. Most of them came in with bright hopes, eager ambitions, wondrous talents, and one by one we ground them down to fit into the total organization machine. They were malleable material. That was evidenced by the fact that their college had been able to pound and pummel them all into the same

mental and attitude shape, so that they all could come out of the same production machine. Industry would follow the same process, and in five, ten, twenty years they would be unmistakably business executives. Was that bad?

What a terrible waste of unusual talents! Still, what could I do? If George was so unusual, let him find his own niche! Every other employee had to!

Accepting the rationalization was gall, but what else? And in the meantime, I did have other problems, problems I could solve.

Six months went by. A short time in the span of a lifetime job, a long time to a bright young trainee who took a temporary job only until something better, to make use of his unusual abilities, could be worked out. I forgot about the five guys. No special trouble over them came to my attention, and they became just five out of the five thousand employees.

I had never accepted George as more than a hypothetical idea, and my wisdom in this course was apparent. If George did exist, he wasn't making his presence known to anybody. I even rationalized George away. Kids often dream up imaginary companions, talk to them, insist that mother set a place at the table for them, make a place for them in their beds. Such a thing had occurred to these five lads when they were kids—and because of their constant association they'd simply kept the idea alive. But now that

they had jobs in separate departments, and were growing up, taking on more adult responsibilities in their jobs, the whole childish idea would soon appear silly to them.

I was glad I'd always kept it purely hypothetical when talking with the engineers and scientists.

With that final rationalization, I dismissed them from my mind completely. In the usual sink-or-swim fashion, they would either climb on up in their jobs through the usual channels, or they wouldn't. Until they became troublesome, they were none of my affair—now.

My little psi machines had likewise been discarded. Association and consequent guilt feelings? Something as childish as the idea of George?

The months slipped away, and almost a year passed. I had forgot the boys.

My phone rang with that long, persistent shrill the switchboard operator uses to tell me that Old Stone Face is on the other end of the wire and chomping impatiently.

"Kennedy here," I said, before I'd got the phone well up to my face.

"What have you been up to this time, Kennedy?" His voice had that patient, measured, grating tone he uses when he is particularly disgusted.

"What is it now, Mr. Grenoble?" I asked with a patience as deadly as his own. Old Stone Face is always saying that he doesn't meddle, and

then proceeds to louse up labor relations.

"You must have been up to something," he said. "The Army, the Navy, the Air Force, the Marines, the Coast Guard are crawling all over me. I haven't heard yet from the Girl Scouts," he finished with a plaintive note creeping into his voice.

"What about?" I asked. I was busily running over my many programs in my mind to see which might be interpreted as cardinal sins by the military, but I couldn't think of anything.

"Sometimes I wish the services hadn't combined," the plaintive note was stronger now. "Used to be, when they played dog in the manger toward each other a business man could appeal to reason—or at least prejudice. But now—"

"What's happened?" I asked again.

"Maybe you'd better come up here to my office," he said. Then, as an afterthought, "When it is convenient for you." The latter was a sop to his often repeated but seldom observed lecture that company executives should show mutual respect toward one another.

"It's convenient right now," I said. We both knew it was a fiction, that he meant get there on the double, and I'd better interpret it that way.

I took a short-cut through factory building Number Two, and had to fend off two supervisors who saw me coming and thought it would be a good time to get in some juicy

grievances. One of them did get in a few words before I could tell him that Mr. Grenoble was waiting for me.

"I think I oughta be told what's going on in my own department," he complained. "Even the stock room knows more about production schedules than I do. Sometimes they load the bins with raw stock a full day before I get the work orders telling me what to do with it."

"I'll speak to production control," I said hurriedly. "Or you take it up with the works manager. It's his baby, not mine."

His eyes reproached me for passing the buck, but I was already too far away from him to smooth him down.

When I passed through the secretary's office, I raised my eyebrows in a question and nodded toward Old Stone Face's door. She made a sign of holding a shield over her head, or hiding under the covers, to tell me that he wasn't at his most affable today. She picked up her shorthand book and followed me into his office.

"What's the trouble, Mr. Grenoble?" I greeted him, and sat down in a chair, informally. His secretary sat down in another, formally, and poised her pencil.

"The trouble is that the Pentagon is sending investigation teams of their bright boys to find out how we do it," he grumbled.

"Do what?" I asked.

He glowered at me as if I were stalling.

"Finish up contracts on time," he exploded.

"You mean we actually met a deadline, and the product passed inspection?" I asked, puzzled.

"Not just one," he said. "Four!"

He got up from behind his desk, clasped his hands behind his back and started pacing the floor. I remembered television shots where a head football coach would start pacing up and down in front of the player benches. All the sub coaches would leap to their feet and start pacing, too. I wondered if Old Stone Face felt I should.

"It's unheard of," he whirled around and shouted at me. "They draw up a contract. They put in a deadline for performance. Then everytime somebody in Congress sneezes, or some petty politician in Europe spouts off a lot of nonsense, they scrap everything and start all over. As soon as a contract gets signed, the Pentagon starts throwing rocks at our feet to make us stumble over them. Nobody ever finishes a contract on time, it just isn't possible, and here we've finished four. So there's going to be an investigation. So what have you been up to, Kennedy?"

I felt like saying, "Who, me?" or "Honest, boss, I didn't do it."

"First time I ever got a complaint that the organization was functioning as it should," was what I really said.

He whirled around from the window where he had been gazing consolately out at the smog.

"Oh, I'll grant you that if we were let alone, it's no more than I'd expect," he conceded—and he would expect it, too. "But the Military is involved, and they're not used to efficiency. They just don't know how to cope with it."

"But we've got Colonel Backhead and his gang . . . er, staff . . . of bright boys watching every move we make," I argued. "Have they found any fault?"

For the first time his face brightened a little.

"It all sneaked up on them, too. Caught 'em with their contracts down. When they realized it they went all frozen faced on me, gave me the silent treatment. They've been busy as little beavers ever since they realized what was happening. Doing their own investigating before the real investigation begins."

"Maybe I'm naïve," I said. "I still don't see what all the fuss is about."

"It isn't normal," he said. "And anything that isn't normal sends them into a gibbering tizzy. I've asked Backhead if he'd mind stepping in here. He minded, but he said he'd do it."

"Backhead and I are not exactly buddies," I said. "You know that, Henry. I refused to allow them to turn this place into a swarm of keyhole peckers and tattlers, and in his mind that's pretty strong evidence that I must be working for the enemy."

"I appreciate it, Ralph," he said in a grudging tone. "Nothing wrecks an organization quicker than to en-

courage informers. That's why I backed you up."

"So maybe you'll get farther with Backhead if I'm not here."

"Maybe I won't get anywhere at all, with or without you," he mumbled. "But I want you to stay." He grabbed up the phone and barked at the switchboard operator. "Check Backhead's office and see if he is coming."

"It's only been five minutes," his secretary cautioned.

He glowered at her and threw up his hands, as if to say that everyone was fighting against him. The phone tingled, and he grabbed it up.

"His office says he's already on the way," the thin, tinny voice of the operator sounded loud through the receiver.

"Probably stopped to harass some—" A discreet tap at his door stopped his comment.

"Let's be calm," I said, as the secretary got up to open the door and admit the colonel.

I have since thought it was the look of intense irritation Old Stone Face threw me as the colonel came through the door, which melted Backhead down rather easily. He probably thought Grenoble was really sore at me, and this would be his chance to cut my throat.

Still he must have come prepared for he had his black brief case with TOP SECRET in big gold letters embossed on its side, to advertise its contents, or its owner's importance.



We got through amenities, such as they were, pretty hurriedly.

"Must be quite a feather in your cap, colonel," I said brightly. "With repeated contracts under your jurisdiction getting out on time. I suppose the Pentagon wants to study how it's done, so they can install the same procedures elsewhere? Probably put you in charge on a national scale?"

It set him back. It was obvious he hadn't thought of it in that light, before. So intently looking for the evil, he hadn't even considered there might be good. And he wasn't ready to start now.

There was a good deal of humming and hawing, a full fifteen minutes worth, before he was ready for us to get a peek at what he had in his brief case. And when he dragged it out, it was evident that his staff had been busy. They had names, dates, facts, times, and figures.

"On March 7th, at 9:45 a.m., the design drawings on the . . . um . . . a certain mechanism was released to the mechanical drawing department. As according to procedure, a certain mechanical engineer, one James P. Bellows, analyzed these drawings preparatory to breaking them down into job lots for the detailed mechanical drawings which would later become the blueprints for this . . . ah . . . certain mechanism." He looked at me. "Does the name, James P. Bellows, mean anything to you, Mr. Kennedy?" he asked ominously.

"No-o," I said honestly.

"It would mean more to me," he said heavily, "if your department had released his file to my staff, as they were requested to do."

Good old faithful personnel clerks!

"No such request came to my attention," I said coldly. "And you know procedure requires all such requests must go through the head of a department."

"There are times, in the interests of national security, when—" he left the sentence dangling.

Yes, when the department head was, himself, suspected.

He didn't pursue it. He picked up another sheet from the stack.

"That was on March 7th, at 9:45 a.m." he reminded. "On the same date, at 11:20, the Acme Components Company—who patriotically opened all their records to us without question—received a telephone order, from your Purchasing Department, bearing your Purchase Order Number 4B6872K, requesting urgent delivery of six gross . . . ah . . . of a certain item which is used only in the assembly of that aforesaid mechanism. This was only one hour and thirty-five minutes from the time the design drawings were released to the mechanical drawing department, and *seven weeks* before all the drawings were released for processing to the various departments.

"A careful check of this one contract alone, shows many instances where your Purchasing Department bought matériel, before they could

have obtained, through normal channels, the information of what they needed to buy; your Production Control department issued work orders to your own various production departments to make component parts of this . . . ah . . . mechanism, weeks before they had received the drawings telling them what to make."

"The works manager must have finally got off the dime and started doing his job," Old Stone Face said sourly. There is a bitter feud between the two. Henry hired the Works Manager under protest. He was recommended by the Military and tied to certain contracts. But he'd been in charge of a civil service project before he came to us, and he'd brought their kind of thinking with him. So there was not exactly a sympathetic harmony between the general manager and the works manager.

"The works manager knows nothing of this," Colonel Backhead said crisply.

"That figures," Henry said.

"He has been most co-operative," Backhead commented. "Without him we couldn't have got anywhere in this preliminary survey, which, I trust, will save much valuable time for the investigating committee."

"Oh I'm sure," I murmured.

"Our survey has not been definitive," Backhead continued. "But we have uncovered an incredible number of incidents, where, under normal procedure things could not have

happened in the way they did. In all, five departments seem most involved — Mechanical Engineering, Electronics Engineering, Cybernetics Engineering, Production Control and Purchasing Departments."

"That just about covers the bulk of our production planning departments," I commented.

"And I find that the majority of these items seem to have originated with, or gone through the hands of a single individual in each of those departments. Bellows, whom I've named; a Claude N. Masters, William Huffman, Thomas Meuhl, and one Robert Osborne. The reason I am frank about these names at this time, is that I expect the same frankness from you, Mr. Kennedy. There is an obvious out-of-procedure communication about Top Secret material among these men. You have not been too co-operative in the past, but the Pentagon has overlooked it because . . . er . . . your file reveals nothing conclusively discreditable."

"You mean Oliver Cromwell would approve of me?" I asked dryly.

He ignored it.

"So I'm making this last appeal for your wholehearted co-operation. What do you know of these men?"

"Nothing," I said instantly.

He raised his eyebrows and pursed his little mouth.

"Look," I said. "We've got five thousand employees. My department interviews a couple hundred new applications every day, many of them come to my desk for study. I make

no attempt whatever to memorize names or case histories; that's why we have records. I have probably seen those names on departmental employee lists many times, but they ring no bells for me."

"But you will instantly make your records available to me," he said confidently.

And now I knew what made him tick. Quite aside from the desire to button this all up before the reps from Pentagon got here and the feather in his cap, he wanted to muckrake all down through our records. We'd had security police like him, men who, on their own time, would stake out all night close to some woman employee's house just to see if they could uncover some amorous situation. It was a filthy kind of mind that was permeating our whole social structure.

"No," I said flatly. "I'll wait for the accredited Pentagon officials."

He stuffed his papers back into his brief case, snapped its lock, stood up, glared at me, and stalked out of the office.

"I don't know, Ralph," Grenoble said with a worried shake of the head. "He's a mean one. He can hurt."

"I'd rather wash dishes for a living," I said, "than help that kind of a guy along."

"Sometimes I think we'd be better off without government contracts," he said in a tone which suggested it wasn't the first time he'd thought of it. "Profits or no profits."

"They've made the whole security program into a blind for the real purpose of enforcing an Oliver Cromwell kind of morality," I said. "And you can't kick, because that would make you an enemy sympathizer and in favor of unbridled sin."

"You think something is really going on in the plant?" he asked, with a worried look.

"Sure," I said. "They'll uncover plenty of dirt. We've probably got a full dozen or so employees who drop into a bar for a glass of beer now and then. And there are probably at least two secretaries out of our couple hundred who aren't married but ought to be. Real, hot stuff to make the headlines. By the time they get through with it, these will be highly trusted subversives in key positions who are just begging for some enemy agent to black-mail them into revealing where Grant's Tomb is located."

"I mean is something really going on, Ralph?" he insisted.

"I don't know," I said, and shrugged. Underneath my disgust I was just as worried as he. "I'll look up these guys he named. He was overconfident that he had barreled us over, that we couldn't refuse him, so he did us that much of a favor, anyway. I'll let you know if there is anything to it."

"I made a list of the names for you, Mr. Kennedy," the secretary said, and tore a sheet out of her book. Her quizzical, but approving look made me wonder if she might

be one of the secretaries I'd referred to. I wanted to tell her that it was none of my business, or anybody else's, so long as she did her work. I couldn't, of course. She might not be one of those secretaries, she might only wish she were.

I gave her a quick wink that would cover either situation. She gave me a blush that would also fit either case.

On the way back to my office I stopped off at the department of the complaining supervisor and told him never mind reporting to the works manager that stock got to his department ahead of work orders. That this was a part of a larger picture

I was investigating, and just to sit tight. He grinned, and shrugged, and implied that he just worked there, anyhow. If that's the way we wanted to run a company, he guessed he could put up with it. Only would I please keep that two-bit Napoleon, meaning Colonel Backhead, out of his hair. I suggested patience and fortitude.

In my own department I picked up the five dossiers from the files and started for my own office.

"Trouble again?" Sara asked, as I walked past her desk.

"Nothing unusual," I said. "Just another investigation by the big brass from Pentagon."

"Oh that," she shrugged. "You



haven't been fooling around with more poltergeists, have you?"

"Why does everyone assume it is my fault when something goes hay-wire over in the factory?" I asked plaintively. I went on into my office and spread the dossiers out on my desk.

There was a connection between them. They all lived at the same address. They'd all been hired on the same day. They'd all graduated from Stanford the same year. Obviously, if they were speaking to each other, they could communicate about their work. And they wouldn't have to wait until they got home. We have telephones, and intercoms. So a mechanical engineer picks up a phone and says "Hey Bob, here's an advance flash on some stuff we're going to need that might be hard to get. Why not order it now instead of waiting for the specs?"

Would that be anything to excite the cloak-and-dagger boys?

Yes, each file had a form showing that the employee had been cleared for secret work. So they could talk to each other without overloading Russia's spy ring.

I pulled their progress records. Each of them had climbed remarkably fast. In one year, each of them had made lead man, or group leader, in his department. Not particularly remarkable in engineering where there's always too few with know-how, and plenty of opportunity for kids with know-what. A little tougher in purchasing and production

control, but not if you really grasped how everything tied together.

I flipped back to their original applications. Personnel uses various codes to grade applications and give the interviewer a memory clue so he can call up a mental picture of the individual. But each of these applications had a code word in the top left hand corner I didn't understand.

In quotes, "George!"

So the interviewer had thought these lads were real George. He'd been right. Their progress records confirmed his opinion that they were good material. But I'd have to caution him against introducing slang codes of his own. A code is worthless unless it communicates the same thing to each of us.

And then it hit me.

I burst out laughing. So George hadn't waited for me to find something for him to do! But while I was still chuckling, I felt the hair on my nape begin to prickle. Maybe the mechanical engineer hadn't *needed* to use a telephone to tell purchasing about the hard-to-buy item! Maybe they hadn't *needed* to send a memo for the expediter to have his stock chasers start delivering matériel to the production machines.

No wonder we'd got contracts out on time. Paperwork is the biggest bottleneck in any large company. It passes from hand to hand, and lays on each desk for hours or days before it is processed and sent along. Weeks can pass between the sender

and final receiver. Change orders—and when the military is mixed up in the deal there's a million—sluggishly flow along behind the original. The started work is scrapped and begun again, and again, and again. The orders saying "Do it" are cancelled out by other orders saying "Don't do it."

George had by-passed the red tape. Each of these guys, now in a minor key spot, had flashed all information on to the others, and the busy little pseudopods had just gone ahead and done things, or made the necessary changes days or weeks before the paperwork could catch up.

I knew how auditors worked, and that's what the Pentagon would send—procedure auditors looking for information leaks, finding them by comparing dates and times and work flow, things that showed prior knowledge to the arrival of the authority to know and do. I knew, right then, that the auditors would find dozens, hundreds of such discrepancies.

I was tempted, I was sorely tempted, to sit back and do nothing. Let them spend days, week, months—or if they'd been civil service trained, *years*—to find out what I already knew.

And then come face to face with the inexplicable.

I think I would have kept my hands off except for those kids. They were just naïve enough to think that getting the job done was more important than the paperwork, which showed their six-months serv-

ice hadn't taught them very much about the Military. I didn't want their F.B.I. files to carry the information that these were dangerous characters to be barred from any sensitive job for the rest of their lives just because they'd tried, in their fashion, to push the job along to get finished by contract deadline date.

Another thought nagged at me. How had they managed to by-pass red tape without fouling everything up for all those people who didn't have a share in George? With all its faults, red tape is a necessity; it is communication telling everybody what has happened or should happen. It can bottleneck, but without it the whole organization falls to pieces.

And ours hadn't!

I supposed they'd kept prior knowledge in their own hands until the rush paperwork had followed through. I dismissed it with that. I shouldn't have. If I'd pursued my thought a little farther, I'd have realized it couldn't have been done that way.

I picked up the phone and put a call through to Old Stone Face.

"I know the answer to that little problem, Henry," I said.

There was a full fifteen seconds of silence.

"So it was something you'd been up to, after all," he answered.

"In a way, I guess it was," I admitted. "I hired the guys. In that sense it was my fault. In that sense,

anything that anybody does is my fault."

He wasn't buying any sophistry today.

"So now I'll ask my first question all over again, Ralph! What have you been up to?"

"I'd better come up and talk to you," I said. "But while I'm on my way you can be thinking of the little poltergeist girl, the Swami, and frameworks."

"Oh no!" he said, heavily. "Not another one of those."

"Yes, sir," I affirmed.

Our first act was to send a telegram to General Sanfordwaithe at the Pentagon, the general in charge of Matériel and Supply, and our most frequent Pentagon contact. My first brush with him had been over little Jennie Malasek and the anti-grav units. He was a stuffed shirt of the stiffest kind, and it had delighted me into trapping him into a promise to furnish us with some poltergeists—male type. But when he found out what they were, instead of exploding, the guy had actually followed through and tried to produce. I suspected that back of the deep encrusted years of military formality there was a human being. The following series of telegrams bore me out.

Our first one said,

CALL OFF YOUR DOGS. WE KNOW WHY CONTRACTS FINISHED ON TIME. IT IS OKAY.

HENRY GRENOBLE,  
GENERAL MANAGER  
COMPUTER RESEARCH  
CORPORATION

In two hours we got his ubiquitous answer.

YOUR REASSURANCE INSUFFICIENT. COLONEL BACKHEAD REPORTS YOUR COMPANY RIDDLED WITH SECRET AGENTS LEAVING TRACKS OF NEFARIOUS WORK EVERYWHERE AND MANY EMPLOYEES MORALLY UNSUITABLE FOR WORK ON GOVERNMENT CONTRACTS. URGENT WE COME AT ONCE SINCE YOU WILL NOT CO-OPERATE IN UNMASKING SAME. SUSPECTS KENNEDY IS A LIBERAL.

SANFORDWAITHE

With Henry's permission, I replied to that dastardly charge personally.

SUGGEST YOU GIVE BACKHEAD DOUBLE BILLED CAP AND MAGNIFYING GLASS AND SEND HIM TO ANTARCTICA. UNDERSTAND SECRET AGENTS DISGUISED AS PENGUINS TRYING TO SABOTAGE ANNEXATION ATTEMPT DISGUISED AS GEOPHYSICAL SURVEY. WE ARE TOO BUSY GETTING WORK DONE TO BOTHER WITH BACKHEAD'S FANCIES AND ALSO HAVEN'T

ASTOUNDING SCIENCE FICTION

TIME TO BE COURT-MARTIALED AGAIN.

RALPH KENNEDY,  
DIRECTOR  
OF INDUSTRIAL  
RELATIONS, CRC.

His reply came within an hour.

IF YOU, KENNEDY, REPEAT YOU IN ITALICS, ARE DIRECTLY INVOLVED I HAD BETTER COME PERSONALLY. WHAT IS THIS NONSENSE ABOUT COURT-MARTIAL? BILL EMPOWERING PENTAGON TO COURT-MARTIAL PRIVATE COMPANIES DEFEATED IN CONGRESSIONAL COMMITTEE BY MISGUIDED LIBERALS AS YOU SHOULD KNOW. BUT STAFF AND I WOULD BE PLEASED TO HEAR EXPLANATION OF WHY CONTRACTS GET FINISHED ON TIME. HIGHLY DISTURBING ABNORMALCY.

SANFORDWAITHE

I called young Bellows in the mechanical engineering department on the interphone. I chose him solely because he was the first name on my list of five. I sketched in the story and the furor it was causing.

"Now," I said, "here's the deal. When you boys told me about George I didn't believe you, and I'm a pushover for believing in oddballs. You lads are going to have to appear before some top brass from the Pentagon tomorrow, and if I

didn't believe in George, what do you think *their* reaction will be?"

"We can convince them, sir," Bellows said instantly, and confidently.

"Not by just saying so," I cautioned.

"No, sir. George has learned a lot since he has been employed here, and we're very grateful to you for giving him the opportunity."

"I don't know," I argued dubiously. "I tried for months to dig up something that would prove he existed, something that only he could do."

"Don't worry about it, sir," Bellows said in a comforting voice.

"Anything you want to tell me in advance of the hearing?" I asked hopefully.

"We'd rather not, sir. You might not give permission, and then we wouldn't be able to prove."

"Now look," I said warningly. "Oh, never mind. Just don't jeopardize the company if you can help it."

"Oh no, sir," he said in a shocked voice. "Nothing like that."

"O.K.," I replied in a tone that said I washed my hands of the whole thing. "It's your necks."

I failed to add it was also my neck if they let me down.

The company grapevine told me when the Pentagon Brass arrived and were ushered directly into the big conference room. Old Stone Face accompanied them. It was his idea that he would first explain George



to them, then if they wanted to observe us pariahs from the lower strata, we should be assembled in the anteroom awaiting their summons.

I wasn't sure how adequately Henry could explain George, but I had to agree that since the idea of caste was so firmly imbued in the military mind that generals could speak only to generals, they would consider it lese majesty if anyone lower than a general manager attempted to brief them.

I gave them five minutes to get settled, and then called five supervisors to get the pseudopods of George sent down to the anteroom. That done, I cut through factory building Number Two to sit with the boys and be ready for the inquisition.

On the way I was stopped by the production supervisor who had complained about the foul-ups in scheduling.

"I don't know why I squawked about the raw stock getting here before the work orders, Mr. Kennedy," he said. "It's all straightened out now."

"Then you got the work orders through?" I asked.

"Naw," he answered disgustedly. "Didn't need 'em. If I'd just used my head, I'd have known what to do."

I looked over at the storage racks.

"Looks like ordinary bar stock to me," I said dubiously. "I don't see how you could expect to know what should come out of your turret

lathes, milling machines and screw machines. Not without work orders and blueprints."

He gave me that disgusted look a production man always keeps in reserve for a white collar.

"If I'd used my head, I'd have known," he repeated. "It's working fine now."

I shrugged, grinned, and left him. I supposed the expediter, one of the five lads, had told him, and he was trying to redeem his position by showing off, by saying that a supervisor just knows these things. The alternative, that he might be speaking the literal truth, that nobody had had to tell him, didn't occur to me.

The short talk delayed me, and when I got to the conference anteroom the boys were all sitting in a cluster of chairs in a corner of the room. I hadn't seen them for a year, and I only vaguely remembered their faces. Yet as a composite group, I remembered them very well. Individually they hadn't changed much, yet, as a composite, I got the impression that this was a much more mature and assured group than it had been during my interview with them. For their sakes, and mine, I hoped so.

I greeted them, all of them returned my greeting in unison, I sat down, a little apart from them. I felt there were many things I should say. I didn't want it on their conscience, or mine, that I had briefed them in attitude or cooked up any phony story. Still, on the way up

from my office, I'd felt I'd be remiss if I didn't sketch in for them what was likely to happen in the conference room.

But now that I was in the room with them, there seemed nothing to say, nothing at all. They weren't nervous, and, for a wonder, neither was I. At most it seemed like an unnecessary interruption in our day's work.

We hadn't long to wait. A major, one of Colonel Backhead's men, and the lowest ranking man in the conference room, opened the door and nodded in our general direction. He didn't give us the courtesy of meeting our eyes, but his face was a study in curiosity.

We stood up and filed into the conference room. I brought up the rear. The brass and braid were all grouped around the far end of the huge walnut table. The chairs at this end of it were evidently for us to use. When the maintenance department had set up the room for the meeting, I'd checked it and noted that the chairs were all evenly spaced around the table. But a shift had taken place. The Military had pulled their chairs closer together and left a wide gap between themselves and the chairs to be occupied by civilians. Old Stone Face was sitting at this end of the table, apparently to be associated with the culprits. We culprits sat down, three on one side, three on the other.

There were cool nods from the brass and braid. A frosty smile for

me from General Sanfordwaithe on the grounds that we had once met before. He was accompanied by a gorgeous Pentagon colonel. To their right sat an admiral and his man, an equally gorgeous Navy captain. To the left sat a pair of Air Force brass who had mastered that wonderful technique of appearing informally formal. Down toward the middle of the table, and dangerously close to the civilians sat Colonel Backhead and his major. There was no greeting for us from either of these two.

In fact, Backhead appeared to consider our entrance as a distasteful interruption to what he had been saying.

"The most that can be said of your explanation, Mr. Grenoble," he continued, and the way he pronounced mister made it an insult, "Disregarding its fantastic incredibility for the moment, is that it is naïve." Then in an excess of generosity he excused Old Stone Face. "Of course it wouldn't be expected that an industrialist would be trained in spotting the nefarious and subtle work of master saboteurs. But we are trained. I submit that you may have been taken in by this wildly preposterous explanation, and that from your point of view you have been honest in offering it to us.

"But let me show you how it looks from another point of view."

Beside me, I felt one of the boys stir a little in his chair. I glanced at them sidelong, and saw that flicker

of secret delight behind their solemn faces.

"This is how it looks to me," Colonel Backhead said again for emphasis.

Without a change of accusing expression, he stood up, climbed up on his chair, leaned forward in a crouch, crawled over into the middle of the conference table, put his head down on the table, and bracing himself with his hands, he slowly lifted his posterior and feet into the air, until he was standing on his head.

"It looks all upside down," he said sternly.

Then he toppled and fell over sideways.

I glanced at Henry and saw that his mouth was hanging open. A glance down the table showed me that General Sanfordwaithe had clamped his grim jaws tightly while he stared with unbelieving eyes. The faces of the rest of the Military showed only pity and contempt. It was the Navy captain who bore out that expression.

"If that's the best headstand you can do," he said icily, "you're no credit to the services."

He crawled up on the table, and with crisp, sure movements formed a triangle with his head and hands. Then, with fluid precision, he raised his feet, brought his legs together, straightened them out, and pointed his toes ceilingward.

"You have to do this regularly," he said in a didactic voice. "I do it every time I want to get a new perspective on things. That is why

the Navy is pulling so far ahead of the Army, we practice getting a new point of view."

"The Navy is no better than the Air Force," the pair of wings shouted in unison. "We're upside down most of the time!" The pair of them climbed up on the table and stood on their heads also.

They seemed to be enjoying themselves hugely. I felt a little sorry for the admiral. He was trying to crawl up on the table, but age was against him. He looked as if, for the first time, he might have to admit he had to face retirement. Couldn't even stand on his head, any more!

Old Stone Face had pushed himself back from the table, and his hands were still upraised, as if it were a holdup. I looked down the table at Sanfordwaithe. His eyes met mine, and the horror in them dissolved into laughter. The explanation had occurred to both of us at the same time. He stood up, he roared with laughter, he gasped, he pounded futilely on his chest, trying to get air back into his lungs. Then a new horror spread over his face, a certainty that he would laugh himself to death. Abruptly, he stopped.

"No," he gasped as soon as he could draw a breath. "Not me, too." He gasped in another breath, and trusted himself to look at the squirming men in the center of the table. They were shoving, pushing one another like little boys in a rough and tumble game in a schoolyard.

"I can stand on my head longer than you can!"

"Can't either!"

"Can, too!"

"My ships can lick your ol' airplanes any day!"

"Can't either!"

"Can, too!"

"Ol' Army's no good for nothin'!" the admiral shouted.

"Yah, yah, yah," agreed the Air Force.

"Is, too!" Backhead's major shouted. "Good for mopping up." He crawled down off the table and started running around the conference room. "Where's the mop?" he whined plaintively.

I caught a glimpse of Backhead's face where he still huddled in the middle of the table, down toward our end. He was no longer caught up in the mob psychology. Like Henry, Sanfordwaithe, and myself, he was an observer. His face was sick with despair.

"Call off *your* dogs, Kennedy," Sanfordwaithe shouted at me above the tumult. "I'm convinced."

I was, too. George was no longer confined to the five lads, not necessarily so. Now I knew why there had been no disruption of our organization when red tape had been by-passed. George had simply taken over.

And what George could take over, he could also let go.

The majestic military crumbled into a heap in the middle of the table, and began to slide off its edges onto the carpeted floor. Back

in their own military mind framework again, they scrambled to their feet and stood at disheveled attention. Their faces were masks of horror, for like the participants in a mob, they remembered everything they had done, but with the guiding entity gone from their minds, they could find no excuse for it.

No one shouted "At Ease!" to them, and slowly they remembered that they were big boys now, far enough along in the Military hierarchy that someone didn't have to tell them every little move to make. Sheepishly, they relaxed and slid back into their chairs. Furtively, they began to straighten their ties, button their tunics, rearrange their medals, preen themselves, recapture the impregnable Military attitude.

I recalled the caption to a cartoon. A dear little old lady was talking to a marine general. "I can understand why you must toughen them up for battle purposes," she said. "But when you're through with them, how do you re-tenderize them so they'll be fit to mingle with human beings?"

Perhaps these men had now been tenderized to the point where they could think rationally. It would seem so.

"Perhaps, Mr. Kennedy," General Sanfordwaithe said, with a twitch of his lips, "we should run over the explanation of George once more. I think we may have missed some of the fine points."

I turned to the five lads.

"You boys can go on back to your

departments now. You won't be needed here any longer."

I looked at General Sanford-waithe, and his nod of agreement seemed to contain a considerable measure of relief.

"Yes, sir," one of the boys said. They stood up, not quite with the precision of a drill team, a move that I now knew was calculated disorder. They looked at me, as if wanting to be reassured that they had done well. I smiled, and so did they.

For one incredible instant George took control of me, and I shared the wonderous delight of being, belonging, the ecstasy of being something beyond human. Then he released me as the boys filed out the door, and I was left grubby, incomplete, ineffectual, bumbling—alone.

I turned around in my chair and faced the brass and braid again. All

of them were looking at me, now without accusation, except Backhead and his major. Those two sat slumped in their chairs, with bent heads, staring fixedly at the center of the table.

"It's been coming for a long time," I began. "The whole civilization has been trending in that direction. It had to come. With billions of human beings now inhabiting the world, there is simply no way that individualism can survive. This is just an advance flash of what may be commonplace before long. It is something new, gentlemen. We don't know how these boys are allied to produce a George. More important, perhaps, we don't know what to do with George.

"And we must think of something, for idle hands, gentlemen, you know—"

THE END

## TRANSLATIONS DEPARTMENT

Mathematical Theorem: If a function passes through zero twice, and has a positive value between, then there is a maximum.

English Translation: If there are two perfectly useless things to do, and a useful thing that lies between them, then there is a best thing to do.

Translation by Dr. Wayne Batteau,  
Harvard Speculative Society.

# MAN OF GOD

*Presenting a thesis that is both bitter, yet hopeful. Is this the difficulty, the reason why nations are so much less kindly than the men and women who compose them?*

BY STEPHEN BARTHOLOMEW

Illustrated by van Dangen

Harlando stepped to the ground with dignity, but another passenger bumped him from behind and he was flustered. Nevertheless, composure is utterly essential to a missionary, so he strode out onto the concrete a few paces, then stopped to scrutinize his surroundings.

Mostly what he had been told to expect. On the left, low concrete buildings, whitewashed against the desert sun, among them a control tower thrusting toward the sky like the steeple of a cathedral.

On the right, an acre of dusty concrete giving way, near the horizon, to the sands of New Mexico.

Not particularly frightening.

No.

A field van rolled up and jerked to a stop, the loading ramp falling out like a tongue. Harlando and the



other passengers began lining up and getting in.

As the van glided away from the mountainous ship, Harlando saw the crew beginning to lower baggage out of some hole in its side—perfectly ordinary people.

The television moderator was blond and had a crew cut, and his name was Dennis Davison.

"And so your basic purpose in being here, Mr. Harlando, is to introduce the religion of the Roatan peoples to Earth."

"Eventually, yes. However, I am here on a visa of scholarship which your government has been so gracious as to provide, and I intend to fulfill that visa.

"The people of Roat are as anxious to learn of Terrestrial culture as I know you are to learn of us. So for several months, I intend simply to move about the country, getting acquainted with you, meeting your peoples on all levels and walks of life. I want to meet the common man; I want to learn what motivates you. In effect, I wish to adopt the viewpoint of Terrestrial Man."

"Eventually, however, you plan to begin preaching the Roatan religion."

"Yes, and I expect to gain many converts. Ultimately, we hope that our religion may become the world religion of Earth, as it is of Roat. It is a good and gentle religion, and I feel that it is admirably suited to Earth."

The monitor revealed that Harlando was long faced with a formidable nose and few facial muscles, giving him a dead-pan look. He would have passed for an Earthman were it not for the light blue complexion and total hairlessness. In deference to local symbolism, he wore a plain black suit with a stand-up white collar.

"That's very interesting, Mr. Harlando, and I'm sure we all wish you a great deal of success on your noble ambitions. Ladies and gentlemen, for the past half hour, you have been listening to—"

A little later, Harlando had lunch with the fellow, then he was left temporarily to his own devices in his hotel.

He looked through the wall, almost straight down to the artificial canyon below.

Hostile? A dangerous people? It seemed incredible. Harlando had come prepared to deal with savages, but of the few Earthmen he had met so far, he had found only ordinary people—quite human, if the term could apply.

Still, the people of Roat were no fools, and they knew the record of these men on twenty-five populated planets which Earth had so far exploited. Roat didn't want to be the twenty-sixth.

And so, a missionary.

There was a discreet knock on the door. Incautiously, Harlando opened without inquiring. A dapper man in a plain brown suit entered.

"Mr. Harlando, of course? I am

Ronald Brundage, of the International Geographic Society. I am to be your official guide while you are here. Did you have a good trip across?"

"Excellent, thank you. And I am very happy to meet you."

He shook hands precisely.

"Well, now, Mr. Harlando, I am sure you are anxious to get on with your work here, but meanwhile is there anything I can do or get for you? Reference books, a toothbrush, perhaps?"

"I do not need a toothbrush; my teeth are chitinous; they repair themselves. However, I am very glad you are here. I am anxious to begin drawing up an agenda, a program of travel—"

"Of course; I understand, and I've come prepared for that—"

It developed that this Brundage had connections. During his first week on Earth, Harlando was interviewed by the President of the United States, the King of England, and even by the director of the United Nations.

That was all very well, but it wasn't exactly what Harlando wanted. One afternoon, after another television appearance, he asked Brundage when he was going to start meeting the people.

"Immediately, if you like. Of course, you understand all this other stuff is common courtesy. You're supposed to shake hands with the President before you start trying on Indian headdresses. Remember you are a celebrity, Mr. Harlando—

Earth's first visitor from Roat, et cetera. However, I do have a travel schedule worked out, and we can leave any time you wish; tomorrow if you prefer."

So the next day, Harlando started across the United States.

He kept a notebook, a sort of diary. One day he wrote:

"Today we visited St. Louis, Missouri. I have come nowhere nearer reaching a true understanding of the Terrestrial people than I was when I arrived.

"We had dinner with a pleasant, middle-class family with three young children. The father was one, Allen Hurst. About thirty-five. The conversation was mostly small talk, but at one point he made so bold as to ask me if I were a real religious missionary.

"I replied that my main objective was to determine whether or not the people of Earth were by nature receptive to the religion of Roat. If they were, we intended to send more missionaries and to establish several large parishes.

"This Hurst was a shrewd one. He asked me why we wanted to do that."

And another time:

"Honolulu, Hawaii. I have discovered that when matters of interplanetary affairs are discussed, the typical Earthman is first somewhat confused\* and becomes gradually hostile. On another television interview, the fact was brought up that Roat owes her present peculiar situa-



tion in interplanetary affairs due to her having had space travel at the time she was discovered by Earth. This began to lead to a discussion of the twenty-five other worlds which were not so lucky, but my interviewer changed the subject to avoid embarrassment.

"Analysis: Various incidents of this kind would seem to indicate that these Terrestrials are plagued by some sort of obscure guilt-feelings. The obvious deduction is that they already have a conscience, and that their conscience bothers them, if only subconsciously. I was sent here on the basic theory that if you give a man a religion, you give him a conscience, but—!!!"

Harlando reached Japan, crossed Siberia, Russia, and Europe. Earth, he decided, was as beautiful as Roat; sometimes more so.

Finally they reached New York and one afternoon Harlando said to Brundage: "Something is bothering me, Mr. Brundage."

"And what is that?"

"I was sent here to bring religion."

"Of course."

"But the data that was given us at home was not complete. Oh, we knew about Terrestrial religions, certainly. But the statistics say that approximately one-third of the Americans never attend church."

"Yes."

"I find that is a misleading statistic. From my own experience, even those who do not attend church usually have strong religious feel-

ings. It is as if religion had some deep, basic, unseen foundation in your society."

"I can understand why you're bothered. On the basis of those statistics, you no doubt came here ready to find a great number of easy converts. But it's a lot harder persuading us to accept your religion when we already have one of our own."

"You haven't answered my question."

Brundage ran his fingers through what hair he had.

"Well, Harlando, I got my appointment to the International Geographical Society in the field of anthropology. I know that religion does have a deep foundation with us. You see, human beings, unlike animals, know with an unequivocal certainty that some day we are going to die. None of us are immortal. So, we find ourselves a god, life after death, et cetera. Primitive man did it in the caves; we do it today. We have to."

"I had not thought of it that way. It is logical. Thank you."

It *was* logical. Human beings, by their very nature, would of course be religious. Ergo, they would develop a conscience.

Why were they such nice people here on their own planet, and such unspeakable monsters in space?

One day, Harlando was standing in a hotel room similar to the one which he had first occupied on Earth. He looked down upon the castles of the city below. Earth was

slowly becoming a utopia due, in part, to those twenty-five plundered planets.

Harlando's world tour was over, and Brundage was by this time familiar enough to enter without buzzing.

Brundage approached Harlando and lit a slender cigar.

"Well, what now?" He watched the missionary's back.

After a while, Harlando turned to look at him. He rubbed the flesh of his neck.

"Mr. Brundage, I have been standing here for half an hour, and I have come to a decision."

"Which is?"

"I am not at all sure that Earth is yet ready for a missionary expedition. I am going to return home immediately and discuss it with the Roatan Council."

Brundage shrugged. "Very well, if you wish. I will apply for your travel permit right away. I certainly hope you will return eventually?"

Harlando answered truthfully, "I hope so, too."

And that was that until the morning of the next day. Then Brundage phoned to say that the travel permit had been denied.

Harlando didn't know what to say except: "Why?"

Brundage's image shrugged its shoulders.

"Some sort of legal technicality. You can appeal, of course, but I doubt it'll do you any good. Better just make the best of it until something develops."

Harlando felt odd. This wasn't right.

"How do I go about appealing?"

"Well, if you're sure you want to—"

And that was the beginning of a six-month struggle in the higher courts of Earth. Eventually it developed that the technical reason for the travel denial was a charge of treason by the United Nations Security Council.

Everyone knew that Roat was essentially a theocracy; that it had no government other than the Church. Harlando had openly advocated that Church. Therefore, Harlando had technically advocated that an alien government be extended to Earth. Therefore, Harlando was technically guilty of treason.

Harlando had an unlimited expense account, but after six months of it he got tired, and finally a certain official named Nelson got tired of it, too.

"Look," he told Harlando one day, "why don't you give up? You're licked and you know it. If the government doesn't want you to leave the planet, you don't leave, and that's that. Be glad they didn't throw you in prison."

Harlando was patient. "But why don't they want me to leave?"

Nelson looked exasperated.

"Mr. Harlando, you know as well as I do why not. Heaven only knows why you were ever admitted in the first place. You know that Roat is the only planet so far encountered which has not yet been subdued.

Therefore, the Security Council considers it dangerous. Therefore, you are dangerous. Therefore, you don't go home."

Harlando stared at him.

"But that is illegal. It is unethical, sinful—"

Nelson leaned across the desk at him, and pleaded.

"Mr. Harlando, *I'm* not the government!"

And so he wasn't, Harlando realized.

There was more of the same, but in the end Harlando came to the conclusion that he was not going home. Even Brundage had deserted him, pleading his reputation, and Harlando couldn't blame the fellow.

So one afternoon he sat on a bench in a public park and looked at his notebook. There was no one else around except for a small boy who was staring at him with wide eyes.

Eventually, he took out his stylus and began to write.

"My little problem has been solved, not that it will do us any good.

"The basic theory that brought me here was that if Roat could bring Roatan religion to Earth, it would establish a strong cultural tie between Earth and our world. Ultimately, we also hoped that a strong religious feeling might possibly develop in Terrestrial minds a sense of conscience, of right and wrong. Make them realize that they had

committed crimes which must be remedied.

"Now I see that we were entirely wrong. For Earthmen already have religion, and they already have a conscience. Nothing Roat can do will make them any better than they already are.

"But it was not Earthmen who went into space—not individual Earthmen.

"It was the Society of Earth, the Group—not the Earthmen.

"I have learned that there is a difference between individuals and the Society. The individuals of Earth are quite ordinary, likable people. But the Society of Earth, the Group, the State—that is a Monster.

"An anthropologist told me why Terrestrials have religion. It is because each man, each human individual, knows for a certainty that one day he must die. Therefore he has need of a God, a religion.

"But that is the difference between the Culture and the individual. For the State does not die. The Society is immortal. And the Society has no God.

"The individual Earthmen are possessed of conscience. But the State has no conscience. It is ruthless; it is merciless."

Harlando put down his stylus and looked up. He shivered. It was getting cold, and it seemed as though it were going to rain.

Then he looked at the little boy and under his breath he muttered, "Ruthless."

THE END

# PLANETS HAVE AN AIR ABOUT THEM

*The first of several articles concerning the development of atmospheres, and the vital consequences thereof—including, you, me, and the rest of protein nature!*

BY ISAAC ASIMOV

Science-fiction writers have many problems of which writers of general fiction—poor, Earth-bound slobs—are blissfully unaware. For instance, we-folks have to consider the problem of atmospheres. If we want our hero to walk about a planet unencumbered with any form of protective clothing, we've got to have an atmosphere; not too dense, not too rare. It's got to have free oxygen; not too much, not too little. Unless we want to deal with problems of low pressure, we'll want an inert diluent; usually nitrogen. Helium, neon and argon might do as far as inertness goes, but substituting any or all of those for nitrogen would force us to find an-

other ultimate source for tissue nitrogen. You can have a bit of carbon dioxide, but not much, or your hero will die of respiratory acidosis. And, of course, water vapor.

So we end up with essentially an Earth-type atmosphere.

If we're content to have our hero live underground or in domed cities or are willing to go through the tedium of having him get in and out of protective suits, there is the possibility of thin atmospheres or no atmospheres or suffocating atmospheres or poisonous atmospheres.

And occasionally some very un-

usual atmospheres have been imagined.

Well, imagination is very fine—Lord knows I'd make a rocky sort of living without one so I'm not knocking it, you understand—but let's not imagine. What do we actually know, or what can we reasonably speculate concerning planetary atmospheres? (WARNING: I'm going to do a lot of speculating.)

Let's go about it in a systematic way, by considering first the raw materials of which a planetary atmosphere may be constructed. The various elements, which are the building blocks of any substance, atmospheres included, are available to different degrees. Some are more common than others and this must be taken into account. Common elements get first consideration in atmosphere building; the commoner, the first. After all, if you were told that for some certain purpose you could use either water or liquid radium equally well, you would be a most unusual character if you went further than the nearest water tap to accomplish said purpose. And this "principle of least action" is as applicable to the Universe as to you.

The comparative abundance of the more common elements in the universe as a whole—according to recent estimates—is given in Table I. The atoms of silicon are set arbitrarily equal to 10,000 and the quantities of atoms of other elements are given in proportion. What is

## TABLE I

### *Atom Abundances in the Universe*

Hydrogen	350,000,000
Helium	35,000,000
Oxygen	220,000
Nitrogen	160,000
Carbon	80,000
Silicon	10,000
Neon	9,000 (minimum)
Magnesium	8,700
Iron	6,700
Sulfur	1,000
All others	2,600

at once obvious is that ninety per cent of the Universe is hydrogen—the simplest element—and ten per cent is helium—the next simplest element. There is also about one-sixth of one per cent of impurities—meaning all the other elements.

It follows then that if you're going to collect a sample of interstellar gas and dust and make a sun or planet out of it, you're likely to end up with a big ball of hydrogen and helium.

That's what the sun is made of, for instance. It is eighty-five per cent hydrogen and fifteen per cent helium, plus a bit of impurity. (The shortage of hydrogen and excess of helium is due to the fact that for four billion years at least the sun has been turning hydrogen into helium to keep shining.)

It's what Jupiter seems made of, too, if the most recent theories are more correct than previous theories have been.

Now that we have a list of the available materials, the next question is: Which of these are suitable for use in atmosphere-making? To be a component of an atmosphere a substance must be a gas or a volatile liquid—or solid—at the temperature of the planet's surface. (By a volatile liquid or solid I mean one which is in equilibrium with a substantial amount of its own vapor at the temperature being considered. For instance, at ordinary Earth temperatures, water is a volatile liquid and iodine a volatile solid. For that reason, water vapor is a normal component of Earth's atmosphere and, if there were enough iodine lying around, iodine vapor would be.)

Now we have quite a decent array of surface temperature in the planets of our own Solar System, and these are given for reference in Table II. The temperatures are

## TABLE II

*Surface Temperatures of Planets of  
the Solar System in Degrees  
Above Absolute Zero*

	<i>mini- mum</i>	<i>maxi- mum</i>
Mercury (bright side)	450	650
Venus (bright side)	330	460
Earth	270	310
Mars	220	290
Jupiter	120	170
Saturn	90	130
Uranus	60	90
Neptune	50	70
Pluto	40	60

given in degrees above absolute zero to avoid the complications of negative numbers.

For comparison the boiling points of the common elements of the Universe are given in Table III in degrees above absolute zero. Note to begin with that at no planetary temperature in the Solar System can carbon, iron, silicon or magnesium form part of any atmosphere. (The surface temperature of the sun is six thousand degrees absolute and all these high-boiling elements *are* found in *its* atmosphere. This article, however, is concerned with planetary and not with stellar atmospheres.)

Sulfur is not a gas at any planetary temperature either, but a substance often remains more or less volatile down to temperature one hundred to two hundred degrees below its boiling point and we can set one hundred and fifty degrees below boiling as a kind of arbitrary limit for significant volatility. Sulfur would, therefore, be a volatile liquid at temperatures equaling Mercury at its hotter moments and sulfur vapor could then exist in the atmosphere.

The other elements are more likely substances for atmosphere-making. Oxygen is a gas out to Saturn and nitrogen is a gas out to Uranus. Both are volatile liquids on Neptune and volatile solids on Pluto. Neon, hydrogen and helium are gases even on Pluto. And since hydrogen and helium are overwhelmingly preponderant in the

Universe as a whole, any planetary atmosphere must, *to begin with*, consist almost entirely of hydrogen and helium.

I say, *to begin with*.

There's a catch. In the gaseous state, the molecules of a substance don't stick together as they do in the liquid and solid state. Each molecule in a gas goes its own way at various speeds and in various directions, including up. There is always a thin trickle of gas continually drifting up and up and some molecules inevitably succeed in escaping from planetary bondage altogether. Atmospheres *leak*, in other words.

The size of the leak varies according to the size and temperature of the planet and is different for different gases. The smaller a planet

is for the atmosphere to escape into space. The warmer a planetary surface is, the faster the molecules in its atmosphere move, and the more rapidly the atmosphere will escape into space. Smallness and warmth increase the atmospheric leak.

In addition, the smaller the molecules of a particular gas, the faster the average velocity of the individual molecules of that gas, and the more likely it is to escape into space. Hydrogen has the smallest molecule and helium the next smallest molecule of all known substances. The atmospheric leak is, therefore, largest for hydrogen and only a little smaller for helium.

Even a planet as large as Jupiter—three hundred and seventeen times as massive as Earth and with a surface gravity of two and one-half times as great—and as cold as Jupiter, may not have held on to all its hydrogen. The hydrogen/helium ratio in Jupiter's atmosphere is only 3:1 instead of the 10:1 it is in the Universe as a whole. This means that if Jupiter has held on to all its helium, it has lost two-thirds of its hydrogen. (There is an alternative here which I must point out. It may be that helium with its lower melting and boiling points has been squeezed out to some extent in the body of Jupiter and that more of it has been forced into Jupiter's upper layers and atmosphere.)

Now Saturn, Uranus and Neptune are all smaller than Jupiter but all are colder, too, and the two

### TABLE III

*Boiling Points of the Common Elements in Degrees Above Absolute Zero*

Carbon	4500
Iron	3300
Silicon	2900
Magnesium	1380
Sulfur	718
Oxygen	90
Nitrogen	78
Neon	27
Hydrogen	20
Helium	4

is, the weaker its gravitational hold on the molecules, and the easier it

effects cancel one another. We can guess that all these—I leave Pluto out as an unknown quantity—have similar hydrogen-helium atmospheres and that, in fact, so do all planets that are large and cold.

As a matter of fact, though, hydrogen and helium are nearly impossible to detect spectroscopically at planetary temperatures. (At solar temperatures, they're very easy to detect, but that's another matter.) It was only quite recently and by rather indirect means that the hydrogen-helium nature of Jupiter's atmosphere was deduced. Before that, astronomers were much more aware of certain other components of Jupiter's atmosphere which, while present only in comparatively small quantity, happen to have strong absorption bands that are easily observed spectroscopically.

What are these impurities?

Checking Tables I and III, you might suppose that the chief impurities would be oxygen, nitrogen and neon in that order. You'd be right as far as neon is concerned. Chances are it's present in Jupiter's atmosphere in a concentration of something below one per cent. You'd be wrong about oxygen and nitrogen, though.

Oxygen and nitrogen in the presence of a vast surplus of hydrogen would form compounds with the hydrogen, particularly under the pressure conditions in a large atmosphere. One atom of oxygen combines with two of hydrogen to form

water ( $\text{H}_2\text{O}$ ). One atom of nitrogen combines with three of hydrogen to form ammonia ( $\text{NH}_3$ ). Water and ammonia would be more stable than oxygen and nitrogen themselves under hydrogen-helium atmosphere conditions.

Similar statements can be made for most of the other common elements listed in Table I. Helium and neon are out of it. They combine with no other element under any condition. They exist in splendid isolation. The others form hydrogen compounds if they can. If they can't, they form oxygen compounds, oxygen being the next most common compound-forming element.

Thus one atom of carbon combines with four atoms of hydrogen to form methane ( $\text{CH}_4$ ). One atom of sulfur combines with two atoms of hydrogen to form hydrogen sulfide ( $\text{H}_2\text{S}$ ). Silicon, magnesium, and iron combine with hydrogen only with difficulty. They much prefer to combine with oxygen instead, forming silicon dioxide ( $\text{SiO}_2$ ), magnesium oxide ( $\text{MgO}$ ) and ferric oxide\* ( $\text{Fe}_2\text{O}_3$ ) respectively.

Sulfur and carbon will combine with oxygen as well as with hydrogen. Oxygen is a lot less available than hydrogen, but both sulfur and carbon prefer oxygen to hydrogen by quite a bit, so sizable quantities of sulfur dioxide ( $\text{SO}_2$ ) and carbon dioxide\* ( $\text{CO}_2$ ) would form.

In Table IV, are listed these common compounds and their boiling points in degrees absolute. (Inci-



dentially, I should mention that the boiling points given in Tables III and IV are the values at Earth's atmospheric pressure. The values vary with pressure, going up as the pressure does as far as what is called the critical point but no further. We'll use the ordinary values given in the tables to avoid complications. They will serve to compare one element or compound with another, and the line of argument would not be much affected by boiling point values that *would* take pressure into consideration.)

Looking at Table IV, we see that magnesium oxide, silicon dioxide and ferric oxide could never form part of an atmosphere under any planetary conditions. On Earth, in fact, these three compounds, plus aluminum oxide—which boils at 2,320 degrees absolute—form at least eighty per cent of the solid crust of the Earth. (Aluminum oxide must be included because in the Earth's crust, aluminum is more common than in the universe in general, for reasons we'll mention later.)

Water would be a gas on Mercury, a volatile liquid on Venus and Earth—and on Mars at its warmest—but frozen solid and not volatile on the outer planets. Sulfur dioxide is in the same situation plus the fact that at Earth temperatures and below it tends to react with water to form an even less volatile compound.

Ammonia is a gas as far out as Mars and remains fairly volatile as

far out as Uranus. The same for hydrogen sulfide and carbon dioxide. Methane remains a gas on Jupiter—always neglecting the pres-

## TABLE IV

*Boiling Points of the Common Compounds in Degrees Above Absolute Zero*

Magnesium oxide ( $MgO$ )	3900
Silicon dioxide ( $SiO_2$ )	2500
Ferric oxide ( $Fe_2O_3$ )	1800
	(minimum)
Water ( $H_2O$ )	373
Sulfur dioxide ( $SO_2$ )	263
Ammonia ( $NH_3$ )	240
Hydrogen sulfide ( $H_2S$ )	213
Carbon dioxide ( $CO_2$ )	195
Methane ( $CH_4$ )	110

sure effect—and would be volatile even on Pluto.

As far as Jupiter is concerned then, the impurities in its atmosphere consist of ammonia, methane, carbon dioxide, neon and hydrogen sulfide; possibly in that order. Neon, like hydrogen and helium, is almost impossible to spot spectroscopically in the cold. Carbon dioxide and hydrogen sulfide are present in minor traces. That leaves ammonia and methane, and those are both easily detectable in Jupiter's atmosphere.

As one moves out from Jupiter, away from the sun, to Saturn, Uranus and Neptune, the ammonia absorption bands get steadily weaker and the methane absorption bands

steadily stronger. This is probably not due to any change in overall composition but only to the fact that as the temperature drops, ammonia becomes less and less volatile; there is less and less ammonia vapor in the atmosphere; and methane, which remains volatile all the way out, has less competition.

We can summarize then by saying that large, moderately cold planets have hydrogen-helium atmospheres with ammonia as the chief impurity, while large, excessively cold planets have hydrogen-helium atmospheres with methane as the chief impurity.

But so far we have talked only of large planets. What about small planets? What about the Earth?

To begin with, the Earth is closer to the sun than are any of the large, outer planets and is, therefore, at a higher temperature. The molecules in its original atmosphere moved faster than those on Jupiter and its colder brethren. Either Earth could not collect the particularly nimble hydrogen and helium in the first place, or, having collected them, she could not hold them. In either case, Earth—and all the inner planets, for that matter—were built up out of the "impurities" of the Universe—the elements other than hydrogen and helium.

This accounts for the great differences between the inner and outer planets and explains why the inner

planets are so much smaller and denser than the outer ones.

Now one frequently thinks of the Earth, at its beginning, as a molten globe that slowly cooled down and solidified. If this were so, one would have to use most ingenious arguments to explain the persistence of any atmosphere at all.

If, however, Earth were formed by gradual accretion of matter in a turbulent maelstrom of interstellar material, rather than by way of a solar catastrophe, the original temperatures might never have been startlingly higher at the beginning than now—say not above the boiling point of water.

Let's suppose that and see where it takes us.

To begin with, let's consider the atomic or molecular weights of the gases that are likely to occur in the Earth's atmosphere originally. These are listed in Table V. Remember—the smaller the atomic or molecular weight, the more likely Earth is to lose that particular gas.

The gases listed in Table V fall into three groups. The light gases, hydrogen, helium, and neon, leak away or are never collected. In either case they are not in Earth's atmosphere. A second group, consisting of the heavy gases, hydrogen sulfide, carbon dioxide, and sulfur dioxide, would remain in the atmosphere even if Earth's surface temperature were rather higher than it is today.

The third group, methane, ammonia, and water require more attention. At today's temperature,

Earth could hold them. If the temperature were higher by fifty degrees they might slip away slowly. Judging from the molecular weights: 16, 17, and 18, they ought all to slip away at the same rate, just about. Not so; other factors intervene.

At a temperature of, say, three hundred and forty degrees absolute, water is still liquid and only a small portion of the substance is in the

## TABLE V

*Molecular (or Atomic) Weights of Possible Atmosphere Components*

Hydrogen	H <sub>2</sub>	2
Helium	He	4
Neon	Ne	10
Methane	CH <sub>4</sub>	16
Ammonia	NH <sub>3</sub>	17
Water	H <sub>2</sub> O	18
Hydrogen sulfide	H <sub>2</sub> S	34
Carbon dioxide	CO <sub>2</sub>	44
Sulfur dioxide	SO <sub>2</sub>	64

atmosphere as vapor and only that small portion is available for leakage. Methane, on the other hand, is a gas and is all available for leakage. Ammonia is in an intermediate position. It, too, is a gas, but it is a gas which is extremely soluble in water—while methane is only very slightly soluble in water. Much of the ammonia is safely tucked away in the oceans where it is safe from leakage.

We can reason then that most of the methane is lost; most of the

water stays; and that ammonia is betwixt and between.

We end up with a planet which has an atmosphere composed mainly of ammonia and carbon dioxide, with methane, hydrogen sulfide, and water vapor as minor impurities and with sulfur dioxide present in traces.

We can summarize, then, the *only* types of atmosphere-structures that may be expected in the Universe on the basis of atom abundances alone:

(1) Large, excessively cold planets — Hydrogen/helium plus methane impurity (example, Neptune).

(2) Large, moderately cold planets — Hydrogen/helium plus ammonia impurity (example, Jupiter).

(3) Small, cool planets—Ammonia/carbon dioxide (example, early Earth).

(4) Small, hot planets—No atmosphere (example, Mercury).

(Note that I am omitting large, hot planets from consideration. No such thing is possible. Any planet close enough to a sun to be hot loses its hydrogen and helium and the elements that are left can only make a small planet.)

But if the atmospheres listed above are the only ones to be expected, that leaves out precisely the one type of atmosphere most important to us—the nitrogen/oxygen atmosphere on Earth today. How did that come about?

Well, the four cases listed above are those that may be expected on the basis of atom abundances *alone*. On Earth, a new factor enters in;—the presence of life.

Life, in general, exists by making use of the energy that can be evolved from chemical reactions among the substances in its neighborhood. Several possible schemes for doing this exist among the life-forms of Earth. There are life-forms that take advantage of energy-forming reactions among sulfur compounds, iron compounds and nitrogen compounds. Such life-forms never evolved past the bacterial stage. The raw materials they use for energy are too specialized.

The real success lay with those organisms that learned to extract energy from the most common substance on Earth—which happens to be water. (The lucky fellow who learns how to make delicious and nourishing soup out of sawdust is going to make a lot more money than one who learns how to make it out of peacock tongues.)

One type of organism—ancestral to the green plants—learned how to make use of solar energy to break up the water molecule into hydrogen and oxygen. The hydrogen was used to convert carbon dioxide—the second most common substance on early Earth—into starch and in this way solar energy was stored as chemical energy to be tapped as needed. The oxygen from the water was a by-product, not needed, and so was released into the air.

Observe that the net result, to the atmosphere, of this process—photosynthesis—is to consume carbon dioxide and to release oxygen. As the green plants multiplied and spread through the oceans and invaded the land, carbon dioxide was used up and oxygen produced at an ever greater rate.

There was the reverse tendency, too. When plant life died, the bacterial action involved in decay consumed oxygen and produced carbon dioxide. The development of animal life was also a factor in consuming oxygen and producing carbon dioxide. However, by the time equilibrium was established almost all the carbon dioxide was gone from the atmosphere—0.03 per cent of our modern atmosphere is carbon dioxide, no more. In its place was oxygen.

In the presence of this vast surplus of the active element, oxygen, any methane present was slowly converted to carbon dioxide and water. The water joined the oceans and the carbon dioxide was replaced by more oxygen through plant action. Hydrogen sulfide was converted to water and sulfur dioxide. Sulfur dioxide entered the oceans and soil as solid sulfites and sulfates.

Finally, oxygen combined with the hydrogen atoms of the ammonia molecule to form water. The nitrogen atom of the ammonia molecule does not combine with oxygen except under drastic conditions and

it went free to tie up in pairs as nitrogen molecules.

The result was that by the time equilibrium was reached and photosynthesis had completed its work of changing the atmosphere, both the carbon dioxide and the ammonia were gone. In its place was nitrogen—from the ammonia—and what was left of the triumphant oxygen. And so a new type of atmosphere must be added to the others:

(5) Small, cool planets, *with life*: Nitrogen/oxygen — example, modern Earth.

There remain, of course, the possibility of intermediate situations. For instance, a large planet with the proper temperature might have methane and ammonia in approximately equal concentrations in its atmosphere and have a hybrid atmosphere intermediate between cases (1) and (2). Saturn and Uranus might be examples of such.

A planet of intermediate size and intermediate temperature, say one lying where the asteroid belt is now and somewhat smaller than Uranus in size, might lose most but not all of its hydrogen and helium and end up with an atmosphere in which hydrogen, helium, ammonia, methane, and carbon dioxide, are all present in respectable proportions. This would be a hybrid of atmospheres (1) and (3), of which there are no known examples.

A planet considerably smaller than Earth or considerably warmer might lose most of its atmosphere but not quite all, retaining a wispy

kind of air rich in carbon dioxide. This is a hybrid of atmospheres (3) and (4) and an example of that is Mars—complicated by the probable presence of plant life.

Finally, a planet might be in the process of developing life, with some of the carbon dioxide and ammonia consumed and free oxygen and nitrogen appearing in the air. This is a hybrid of atmospheres (3) and (5) and there are no known examples.

I have now covered, as far as I can tell, every type of atmosphere that there is any likelihood of encountering anywhere in the Universe.

Any *reasonable* likelihood.

As a science-fiction writer, however, I strongly object to being deprived of my right to set up unreasonable situations if I so desire and so the rest of the article will be devoted to atmospheres that are, in the main, wildly improbable.

Life depends, as I said, on the utilization of energy. The way this is handled on Earth, stripped to its bare essentials, is this:

Plants, utilizing solar energy, split water to hydrogen and oxygen, storing the hydrogen in their tissues. Animals—and plants, too, for that matter—make use of the chemical energy of the stored hydrogen. Animals eat food which consists of plant tissue or animal tissue derived from plant tissue and combine its hydrogen with the oxygen they breathe. In other words, we have a cyclic

ASTOUNDING SCIENCE FICTION

water / hydrogen-oxygen system. Plants push in one direction and animals in the other, the whole remaining in balance.

Furthermore, one of the members of the system is a liquid present in sufficient quantities to form oceans and one of the others is a gas forming a major portion of the atmosphere. So let's say that in order to have life-as-we-know-it, we need a cyclic system with one member a liquid and another a gas.

What other systems are possible? Is there anything we can substitute for oxygen? Something, which like oxygen will produce energy if combined with hydrogen and something which is a gas and which produces a liquid on combination with hydrogen.

Well, to substitute for oxygen it has to be an active chemical and the only low-boiling elements that will bear comparison with oxygen as far as activity is concerned are sulfur, chlorine, fluorine and bromine. To give you an idea of the kind of pickle we're in, Table VI gives the atomic abundance of these substances in comparison with oxygen—on a silicon equal to 10,000 basis.

From Table VI, you can see at once how improbable it is that the atom distribution over sizable volumes of space should be so abnormal as to create planets in which sulfur, chlorine, fluorine or bromine are the major components of the atmosphere in the place of oxygen.

But we'll ignore that and just

consider the cyclic systems that result. They are:

- a) Hydrogen sulfide/hydrogen—sulfur.
- b) Hydrogen bromide/hydrogen—bromine.
- c) Hydrogen chloride/hydrogen—chlorine.
- d) Hydrogen fluoride/hydrogen—fluorine.

In Table VII, some data are given on the components of these systems.

If we take sulfur first, we can see from Table VII—and Table II—that sulfur is a gas not even under extreme Mercurian conditions, and that at any temperature at which sulfur is gaseous, hydrogen sulfide is *certainly* gaseous. However, who says it is sulfur that has to be the gaseous component of the cycle? At any temperature between 393 and 718—which covers the normal temperature range of Venus as well as Mercury—it is possible to have a hydrogen sulfide atmosphere and a liquid sulfur ocean.

The same inversion holds true in the cases of bromine and chlorine. Neither a bromine or chlorine atmosphere is admissible since in both cases there would be no liquid component of the cycle. Hydrogen bromide and hydrogen chloride would also be gaseous. But at a temperature range of 266 to 332—Earth and Mars—one could have a hydrogen bromide atmosphere and oceans of liquid bromine; while at a temperature range of 188 to 239—asteroid belt—one could have a

## TABLE VI

*Atom Abundances of Oxygen and Possible Substitutes*

Oxygen	220,000
Sulfur	1,000
Chlorine	21
Fluorine	3
Bromine	0.5

## TABLE VII

*Temperature Ranges for Gas-Liquid-Solid States of Various Substances*

Sulfur	393 to 718
Hydrogen sulfide	190 to 213
Bromine	266 to 332
Hydrogen bromide	187 to 206
Chlorine	172 to 239
Hydrogen chloride	162 to 188
Fluorine	50 to 86
Hydrogen fluoride	190 to 293

Note: Each substance named is liquid between the two temperature values—in degrees absolute—solid at temperatures below the lower value, and gaseous at temperatures above the upper value—atmospheric pressure assumed.

hydrogen chloride atmosphere and oceans of liquid chlorine.

In all three cases plants would have to breathe in hydrogen sulfide—or hydrogen bromide or hydrogen chloride—break it up to hydrogen and sulfur—or bromine or chlorine—store the hydrogen in their tissues and excrete liquid sulfur—

or bromine or chlorine. Animals would have to eat the plants and drink the liquid sulfur—or bromine or chlorine—reform the hydrogen sulfide—or hydrogen bromide or hydrogen chloride—and belch it out periodically.

This may sound complicated and unpalatable to you but the big drawback is that when hydrogen and chlorine combine they yield only one third the energy that the combination of hydrogen and oxygen does. Hydrogen and bromine yield only one eighth as much and hydrogen and sulfur only one tenth as much. Life is such an energy-consuming thing that that alone should eliminate the bromine and sulfur system—at least for anything over the micro-organism stage—and make the chlorine system pretty shaky.

(In passing, incidentally, Hal Clement, in "Iceworld" referred to a world with a sulfur atmosphere and I, myself, in "C-Chute" to a world with a chlorine atmosphere. Neither one of us had worked out all the implications obviously. I've never come across reference to a world with a bromine atmosphere, except that Raymond Z. Gallun once wrote a story in which Jupiter's Red Spot was supposed to be bromine, but he had no life-forms living in it.)

Fluorine is another thing altogether. No inversion is necessary here. At temperatures between 190 and 293—Mars—it is possible to have a fluorine atmosphere and a

hydrogen fluoride ocean, and fluorine combines with hydrogen to yield one and one half times as much energy as the hydrogen-oxygen combination would produce. This seems the best bet—if we could only forget how rare fluorine is in the universe compared to oxygen.

But there's a catch. Fluorine yields a big helping of energy on combining with hydrogen and that means that it is that much more difficult to break up hydrogen fluoride into hydrogen and fluorine.

Plants on Earth break up water by using the energy of red light. To break up hydrogen fluoride, red light would not be energetic enough. Blue light would be necessary; perhaps even the near ultraviolet.

This makes things tricky. If the sun is close enough or hot enough to provide this more energetic light in sufficient quantity, it might make the temperature of the planet hot enough for a hydrogen fluoride ocean to be impossible. If the sun is far enough or cool enough to allow the hydrogen fluoride ocean to exist, there might not be enough energetic radiation to allow fluorine-type photosynthesis to take place.

(Again, in passing, it was H. Beam Piper, I believe, who once dealt with a planet with a fluorine atmosphere.)

In all these cases, by the way, the effect on the composition of tissue constituents is profound, but I am deliberately neglecting that. I'm not even thinking about it. That's for

some other article some other day. Sufficient unto *this* day are the atmospheres thereof.

So far, we have been replacing the oxygen atoms of our familiar water-oxygen cycle. What if we leave them alone and replace the hydrogen atoms instead. Sulfur is the only substitute I can think of. In the range from 393 to 718, we can have a sulfur dioxide atmosphere and a liquid sulfur ocean. Plants would breathe in the sulfur dioxide, break it up into sulfur and oxygen and store the oxygen in their tissues.

Animals would eat the high-oxygen plants, drink the liquid sulfur and belch out sulfur dioxide. The beauty of this is that the combination of sulfur and oxygen yields as much energy as the combination of hydrogen and oxygen.

Another possibility involves not an element but a compound, carbon monoxide (CO). Carbon monoxide will substitute for hydrogen since it will combine with oxygen to form carbon dioxide, yielding sufficient energy, too. The only trouble with that is that carbon dioxide is a liquid over only a very small temperature range, twenty degrees or less and then only under pressures at least five times as high as that of our own atmosphere. Arranging to have a carbon dioxide ocean is too tricky to be practical.

This may cause you to think what about using other and more complicated compounds—a carbon mo-



noxide, formaldehyde system; or a cyanogen-hydrogen cyanide system. Well, the more complicated you make a system, the more you'll have to sweat justifying it, and the less likely you are to meet it anywhere in the universe. The same goes for systems where both hydrogen and oxygen are replaced.

I will leave the problem of making up atmospheres at *that* level of complication and improbability to the reader.

I would like to mention, though, before leaving you, one atmosphere system that I think is more probable than any I have mentioned in this wacky half of the article and which, as far as I know, has never been used in science fiction. I hereby make it part of the public domain with my blessings.

The system is a *reverse water/hydrogen-oxygen* system.

Imagine a planet the size of Uranus in the position of Mars. It has just managed to hang on to enough hydrogen to allow it to be a major component of the atmos-

phere, along with ammonia methane and carbon dioxide, and yet the planet is just warm enough to allow the presence of liquid water.

Plant life on such a world might split water to hydrogen and oxygen. It would then combine oxygen and methane—which it breathes—to form starch, liberating the hydrogen into the atmosphere. The methane would be replaced by hydrogen; the carbon dioxide would be reduced to methane and then replaced by hydrogen; the ammonia would stay put. The atmosphere of the world would end as only hydrogen and ammonia.

Animals would eat the starch; breathe the hydrogen; recombine the oxygen of the starch with the hydrogen to form water, and breathe out methane gas.

Our situation, exactly, but in reverse.

With which thought, and with my head humming slightly, I'll step out into the back yard to take a deep, invigorating breath of oxygen and stare fondly at the grass which is so busy making more of it.

THE END

## "YOU'RE PROBABLY DEAD..."

1. Statistics show that over 98% of all individuals born are now dead.
2. Therefore you're probably dead now.

Well . . . ? It's perfectly logical isn't it?



## A MATTER OF SECURITY

*Creative thinking is inherently destructive; it destroys the security of the status quo. So, naturally, Security must be destructive, too . . .*

BY W. T. HAGGERT

Illustrated by Freas

"Sit down," said the man at the desk.

"Thanks."

"I think we might begin by introducing ourselves. My name's Hansen."

"My name's Foster, as you well know, and what's the pitch?"

Hansen's eyes twinkled briefly. "Good. Right down to business. First

I want you to know that there are no recording devices or other gimmicks in this office. You'll have to take my word for it, because I don't want you tearing the place apart. I'll take your word that there's no recorder in that brief case if you'll just open it wide enough to let me make sure."

Foster paused a moment, then

opened the case. Silently he removed a recorder from the brief case and laid it on the desk where Hansen could see it. Then he clicked the switch to "Off" and sat back waiting.

"You were saying that your name is Foster. You have a very interesting history, Mr. Foster."

"The market's been good in the past few years."

"Almost uncannily so. You're just about the only man I know of who can play the stock market day after day, losing just about as much as he makes, and still growing richer with every passing year. One might almost think you had the odd business going on the side."

"Oh, I have dabbled that way a bit, but nothing seems to last very long."

"Granted. Blackmail seldom does."

Foster stood up, reached for the recorder, and had it in his brief case preparatory to leaving when Hansen spoke again. "Sit down, Foster. You've got nothing to hide from me. When I sent for you, I did so because I have a job that must be done, and I wanted to make sure I had the right man to do it. I've got enough money to investigate people before I hire them, and I've spent enough on you to know that you've been a blackmailer, in addition to a few other odds and ends like forger, embezzler, counterfeiter, and common safe cracker. There isn't a side of the confidence rackets you haven't fingered, and frankly that's fine by

me. I need somebody with your qualifications, and I'm prepared to pay him his worth. Now put that thing back where I can see it, and sit down."

Foster thought for a moment, then sat down and put the portable recorder back on the desk. Hansen picked it up, glared at Foster, and ran it back to erase the last few seconds' conversation, swearing as he did so. Foster had inconspicuously switched it on as he returned it to his brief case.

"I think it's only fair to tell you," said Hansen, "that you're going to be playing with much bigger stuff this time than you've handled before. Also, what you'll be doing is almost legal, and I don't want you fouling up the works in the middle of this deal with some petty conviction on another matter. Is that clear?"

"I haven't been convicted yet," said Foster, smiling.

"No, and you're not going to be, while you're on my payroll. Is anything on the way right now?"

"Oh, I do have one little deal working, but it's not—"

"Tell her she's off the hook," snapped Hansen, and tossed an envelope across the desk. "That's ten thousand credits on account. Don't spend it all in one place, and get rid of all your other obligations. You'll need a clear field for this operation."

Foster took the envelope, riffled briefly through the notes, and tucked it into the brief case. "I'm all ears," he said, smiling broadly.

"Good. Now here's what I have in mind."

The two men spoke earnestly for almost an hour, after which Foster nodded his understanding, and made ready to leave.

"One last thing," called Hansen. "Name it."

"This could get rough. Ever kill a man? Say, two or three years ago?"

"I was acquitted when they tried me on that rap, Hansen."

"Sooner or later you're going to call a spade a spade with me, and then we'll get something done. You've been tried and acquitted. You can't be tried again. I want to know if you killed that mechanic."

"I guess you can't hurt me. Sure, I did it."

"Good. You'll need guts for this job."

Three months later a little known man named James Lombard walked unfamiliarly down an unfamiliar street, and opened an unfamiliar door with an unfamiliar key. Lombard looked just about as he had always looked. Sandy hair which had not seen a barber for a month curled over the collar of a white shirt all but hidden beneath the rough exterior of a tweed suit. It was remarkable that Lombard was acting in a manner at all unusual, since the casual observer could easily have seen the same man walk down the same street at the same time any morning for the past four years. Above the door hung a sign, already dirty from the city's smog, "James

Lombard Testing Laboratories," and behind the door where the mail slot emptied onto the floor of the office were two advertisements, each addressed to James Lombard, B.C. Sc., owner of the small firm.

A more astute observer might have noticed the slight difference in Lombard's walk, the hesitation as he drew out the key to the office door, and the way he almost walked over the morning's mail before stooping to pick it up. It would have taken an exceptionally searching glance, however, to pick out the little details that revealed this morning's James Lombard to be a surprisingly different person from the man who customarily went through these motions. A person, in fact, who reminded one of a certain ex-confidence man named Foster.

The real James Lombard, of course, was miles away, beginning a six-month vacation with his wife and children. He was still puzzled by the events which had preceded his sudden departure, and still somewhat uncertain that he had done the right thing. Still, the whole thing seemed reasonable enough. A well-dressed gentleman from a large corporation wanting a place to enter into a very secret type of research, a deal between Lombard and the gentleman requiring only that Lombard tell his regular customers he couldn't handle them for a while, then make himself scarce for six months, leaving access to his laboratory where the gentleman would work, and his apartment, where the gentleman

would stay; an insurance policy protecting Lombard from loss through damage to any of his possessions, and a fee (Ah, that fee!) large enough to buy the business, let alone use its facilities for six months.

Still, there were the other details. Why should the matter of secrecy be carried to the point that no one was to know that he and his family were on holiday? Above all, why must he travel under an assumed name? Surely no other corporation would pick up an industrial secret simply by noticing that his one-man operation was still working while he was on vacation. "Oh, well," thought the real Lombard, "it's their show. They paid enough for it. Let them run it any way they want to."

James Lombard's Laboratory was housed in a small building in an older section of the downtown area. The building was not new, and showed its twenty years without shame, displaying its blistered paint and dirty mortar with the air of one who is past caring. It was the only single story building on the street, walled on opposite and adjacent sides with newer, higher structures, topped by the ten-story office building immediately opposite which seemed to bend forward in deference to its small neighbor.

Part of the reason Hansen had chosen Lombard lay in that very fact. Hansen wanted the building to be completely occupied by the tenant Foster was to impersonate. The business had to be small, a one-man operation in fact, and not very suc-

cessful, since for the time Foster was there normal customers would have to go elsewhere. Lombard's testing laboratory fitted.

The choice offered another advantage also. Lombard's apartment was in a large block where the number of people coming and going completely submerged the activities of any one individual, and the small errors Foster made in his impersonation of Lombard went completely unnoticed. The absence of his wife and children was noticed, of course, but no one asked where they had gone for fear of unearthing a family quarrel which was none of their business.

For the first three weeks of the impersonation, Pete Foster was busy placing orders for and expediting materials. Hansen had given him a month, during which he was to order materials according to a list supplied by Hansen. As he thumbed the directory, Foster wondered why Hansen was going to such pains. Hansen had told him he was ordering materials that would never be used, simply to keep up appearances. Foster scowled, thinking of the unnecessary expense, then comforted himself with the thought that Hansen was paying the bills and got on with the job.

It was two months before Hansen was satisfied that Foster knew his part well enough to carry off the scheme, and it took another month for Foster to arrange the meeting the way Hansen wanted it arranged.

Foster almost backed out of the deal several times during this period, but always found himself drawn back in again before he even got to the point of contacting Hansen by the thought of the share he'd get of the pay-off. Hansen was right. It was big. And strictly speaking, the law couldn't touch them. He stayed in.

The meeting took place late in the afternoon. Foster's skill as a confidence man was chiefly responsible. Probably no one else could have combined sheer brass with the shameless lying it had taken to get the three men who sat across from him in the same room at the same time. Nevertheless, they were there, and the time had come to lay the cards on the table.

"Gentlemen, he began, "in the interests of concluding our business as swiftly as possible, I would like to make it clear that each one of us is here under false pretenses." He waited as surprised glances traveled around the room. "I think it will help if we each acknowledge that we know who we are talking to. Consequently, although I believe each of you has an excellent knowledge of the others' habits and occupation, I will introduce us all around, and then we can get down to the problem at hand."

Foster did not wait for any comment, but went on, "This amiable looking gentleman on my right is Dr. V. M. Volrich, technical representative of the Russian government."

The amiability vanished from Vol-

rich's face, and the kinky-haired man opened his mouth to speak, but Foster didn't give him a chance. "Immediately by the door," he went on, "is the man holding the corresponding post for the government of Great Britain, Major R. J. Hopkins, and on my left we have our own Edmund Chine, who is a technical services advisor in counter-espionage for the United States. Naturally, since all of you spend most of your time spying upon each other, the first thing you must do is deny being what I say you are, and knowing each other as I say you do. So let's get it over with."

There followed a stunned silence for at least thirty seconds. Hopkins passed the conversation's brief hiatus idly puffing on a huge pipe. Then he looked up at Foster and said, "You know, you've got yourself nowhere. If we are what you say we are, we'll deny it. On the other hand, if we are *not* what you say we are, we will also deny it. My suggestion, gentlemen," he said, looking first at Volrich, then at Chine, "is that we agree among us that this man Lombard is completely insane, and that we stick around to see if he performs any antics sufficiently amusing to take home to the family." Then he looked up at Foster, who was smiling broadly, "Is that what you expected?"

"Frankly, I didn't know what to expect," said Foster, "but I must admit that I'm pleased with your attitude." Foster had good reason to be pleased. Hopkins had called him

"Lombard." His disguise had not been penetrated.

"Now that your own false pretenses have been taken care of, I think that I might just as well reveal my own. Gentlemen, you are not here to discuss paint products, new plastics testing procedures, or annealing procedures for carbon steel. I am sorry that I had to use these subjects as excuses to make you agree to come here, but as the subjects did come from the fronts each of you have put up to cover your positions with your governments, you have no one to blame but yourselves."

Foster looked around the room for a moment, then went on, "I think we might dwell on a little recent history for a moment, just to make my position clear. Back around 1956 or 1957 the Cold War officially came to an end. Presumably, we're all pals together, now, sharing all scientific advances equally, inspecting each other's arms production regularly, and in short, living in a time of unparalleled international trust. Economically, I also realize that we've come closer together. In Russia, Dr. Volrich, I understand that the small independent businesses which began to receive official sanction about eight years ago are growing into sizable private companies. Here, the past eight years have seen us move further and further toward a mixture of public and private enterprise that's weighted definitely on the 'public' side. In Great Britain, there hasn't been much change. Middle of the

road again. A mixture of public and private enterprise.

"The old mistrust still prevails, however. Each of us believes ourselves to constitute a true democracy. As Americans, we still like our system, the English still like theirs, and the Russians still like theirs. Each government feels that the others still have in them the elements of an aggressive totalitarian state, and consequently we still fear each other. Only now, it's a secret, of course. On the surface we're the most trusting bunch the world has ever seen.

"You gentlemen are part of this situation. While the arms inspections go on, inspecting and limiting production of such things as nuclear missiles, jets, and so on, secret laboratories in each country are working on new weapons, and I suspect that secret factories in each country are turning them out in usable quantities just as fast as their development can be completed. Consequently, espionage and counterespionage still exists. Ironically, no government can do anything about the situation without risking a serious breach of diplomacy which might result in a war."

Chine shifted in his chair, and said, "If all you want to do is present us with a lot of absurd political babble, frankly Mr. Lombard, I've got more pressing things to do."

"I think you'll find the meeting interesting, Mr. Chine. We haven't got to the meat of it yet. Just to conclude my resumé of where we stand, however, let me say that each of you is charged with the respon-

sibility of finding out just what the other governments are up to, and carry on your day-to-day activity as a front for this responsibility. While I realize none of you can afford to admit this, even in the privacy of my office here, I think my statements will allow each of you to act with some freedom you might not otherwise dare to use."

Volrich laughed. "Well, at least, Mr. Lombard, you're entertaining. Go on."

"Thank you," said Foster with excessive politeness. "Gentlemen, I have a weapon to sell."

The room was soundless for a moment, and then Foster went on, "Some time ago, an associate of mine discovered a means of creating a force field which can revolutionize all forms of transport, and will make possible limited space travel. This invention will become indispensable to the armed forces of its owner. It is my intention to sell this to the highest bidder."

"We already have space travel," said Hopkins.

"We have four artificial satellites," corrected Foster, "three of which are nothing more than radio-telemetering devices. The fourth, the space station upon which an international crew is living taught us that it's so expensive to lift men and material above the stratosphere by rocket that we can't hope to reach the Moon for another five years. I don't see how you can say we have

space travel when we haven't reached the Moon yet."

"I concede defeat," said Hopkins.

"My associate's force field is adaptable to many of the engineering problems we have struck in aeronautics and astronautics, and perhaps to other fields which he has not explored. I think a demonstration will serve far better than words, however, and I would like you to see such a field in action. On my desk here is a model which has a tiny field generator mounted within it. I'm sure no one has missed giving it careful scrutiny while we've been talking."

As he spoke, Foster picked up an aluminum lens-shaped object from the center of the glass-topped desk before him. It was perfectly smooth and featureless, and approximately a foot in diameter. He passed it to Volrich and went on.

"The model is radio controlled by a transmitter located in the other room, and when I close the switch here on the side of my desk a tape will begin to feed into the transmitter input. The model will then begin to operate, and you can see for yourselves what it can do."

He waited until the model had been passed from Volrich to Hopkins and Chine, then relieved Chine of the burden and placed it in the center of the office floor. He walked back to the desk and closed the switch at its side. Slowly the aluminum disk began to glow with a blue-green luminescence which steadily increased in intensity.





After perhaps ten seconds, the model lazily lifted itself from the floor, and rose to a height of about four feet, where it hovered. Then it began a tight circling motion, describing a horizontal circle in midair, slowly at first, and then with greater and greater rapidity, until the hiss produced, as it cut through the otherwise still air of the office, became clearly audible.

Suddenly the circuit changed its inclination. There was no sound accompanying this change, but as though a switch had been closed somewhere, the glowing circle now made by the model as it swung around its course lay on a vertical

plane, touching neither floor nor ceiling.

Foster spoke for the first time since the demonstration had begun. "The model is now revolving at a rate sufficiently slow to permit those of you with reasonably good eyesight to see it as it revolves. Shortly it will increase its speed of revolution until you will be unable to see it in flight, although of course, the glow will still make that circle in midair we now see. The increase in speed will stop when the centrifugal force equals forty g's. At this time the model will remain at constant speed for thirty seconds, following which it will brake to a stop. Braking acceleration will be 120 g's."

Foster had hardly stopped speaking when the hiss made by the model as it rose and fell in its circular course began to increase. The sound rose to deafening proportions, and as Hopkins and Volrich put their hands to their ears, Chine smiled softly to himself and reached for the button on his inconspicuous hearing aid. Suddenly there was no sound, and the disk was once again visible, hovering where it had begun, approximately four feet above the office floor. From this elevation it slowly sank to the floor, and the glow faded.

Wordlessly, Foster left the desk and took a small key from his pocket. He fitted the key into an almost invisible hole in the top of the disk, and began to use it as a handle, revolving part of the upper half of the lens-shaped object in a counterclockwise direction. Carefully, he inserted his hand into the opening left by the cover he had removed, and withdrew a small white mouse, which he passed to Volrich, who waved it aside; Hopkins, who nodded his satisfaction that it was indeed alive; and to Chine, who accepted it eagerly, letting it run back and forth in his cupped hand.

"Gentlemen, the secret of this model is for sale," said Foster, "and I think you will have some questions for me."

"How many g's did you say?" asked Chine, still watching the mouse as it nibbled at his thumb.

"One hundred and twenty on braking to a stop."

"How did he stand it?" asked Volrich, indicating the animal in Chine's hand.

"There was nothing to stand," replied Foster. "The field enclosed the entire disk. The acceleration acted on every particle of matter enclosed by the field, in direct proportion to its mass. Now, in a car or a jet, when you accelerate, the motor pushes the body or the fuselage, which in turn pushes you. You can feel the seat pushing your back as you accelerate. At high accelerations this becomes so severe that the pressure acting against your body's inertia can dislocate organs, break blood vessels, or even break your neck if your head's not supported. But with this field, the field generator, and every particle enclosed by the field it generates is acted on by the same force in proportion to its mass. Consequently there's no resultant force, or 'seat pressure' as we've called it, between various articles within the field, and there's nothing left, therefore, that will do any damage. The mouse there, aside from getting the feeling that he was in free fall, had no sensation of motion at all."

"Why don't you patent it?" asked Chine.

"I don't think it's patentable," replied Foster. "Basically, all I'm doing is exploiting a law of nature. In two or three years' time, someone would surely come out with a device to exploit the same law, sufficiently different to beat any design patent

I can get, and sufficiently similar to do the job."

"Well, why not sell the idea as is to a large corporation?" asked Hopkins. "That's been done before, and they'd take the risk."

"Yes, they'd take the risk, and most of the money," snapped Foster. "Let's stop beating around the bush. I'm interested in only one thing, and that's the almighty buck. I want to bleed this thing for every penny there is in it for me and nothing else matters. It's being offered to you because you can afford to pay more than anyone else, and I don't care which of you gets it. There's not a spark of patriotism, brotherly love, or altruism in my body, and I'm not the least bit ashamed of myself."

Foster's face reddened as he went on, and he idly complimented himself on a fine job of speech-making as he felt the warmth of it. "I'm not interested in spending the next five years battling with the patent office. I don't want to go through all the hocus-pocus of setting up my own company to be first out with force-field devices. I don't want a nice, safe government-supported research lab all my own to putter in for the rest of my days. This thing's worth at least five million as it stands, with no further development or work on my part whatsoever, and I want the money now, to go out and have a good time with!"

"I thought you said you weren't the inventor," murmured Chine.

"I'm not." Foster scowled for a moment, and then went on. "Actu-

ally, I've been echoing the inventor's sentiments for the last few minutes. All I'm doing is marketing the thing for him. In fact, I don't even know how it works."

"And why," asked Volrich slowly, "is the inventor not doing this marketing himself?"

"Because he's afraid you boys will play rough. Once one of your governments has this little secret, that government will be anxious that none of the others should get it. He doesn't want to find himself in a sniper's sights to keep that secret safe from others he might tell about it. On the other hand, he doesn't want to experience 'friendly persuasion' to tell the secret to whichever two of you lose out on the bidding. After the sale, I'll be useless to you. I don't know how the thing works, and I don't know the inventor's true identity. Within an hour after the sale, I won't even be able to help you find him. He'll be lost to me, too, and I'll be happier, because until then, I'm not really safe from you."

"Well, if we are who you say we are, I suppose you might not be," laughed Chine, "but frankly, about the only danger you're in right now is being hauled off to an asylum."

"Oh, come off it, Chine!" snapped Hopkins. "The man's called the shots right down the line, he's got the goods for sale, and right now you'd need an armored car to get him near asylum gates and you know it. Let's face facts."

Chine studied the mouse, which

was poking its head through his stubby fingers in a vain attempt to escape, and made no attempt to answer Hopkins' outburst.

Volrich, who had also remained expressionless, finally broke the silence. "All right, what are your terms?"

"Each of you will inform your government regarding the existence of this invention. You will be given no additional information aside from that which you have already received on the technical peculiarities of my associate's force field.

"Immediately upon my closing the switch for the second time," said Foster, tripping the stubby lever at the side of his desk, "the model will rise, pass out of this office into the laboratory behind, where it will come to rest in the large assay furnace which has been left open for it."

As he spoke, the model glowed, and began to move toward the door separating them from the rear of the building. It smashed through the frosted glass in the upper section of the door, and all further sound was drowned by the noise of the glass shards hitting the floor on the other side.

"You forgot to open the door," smiled Volrich.

"In any case," continued Foster, "there is now only one remaining model of this type of device. There exists also one set of blueprints and specifications which will reveal the internal workings of the model that has just been destroyed, and a set of calculations and a proof for the

theory upon which it is based. This material will be sold to one of your governments.

"These papers are now elsewhere, and will be forwarded immediately to a fourth government which I shall not bother to name, should any misfortune befall me before the sale is completed. I do not think any of you would care to risk that.

"Immediately upon deciding which government will receive the papers involved, I will send a message which will result in the papers being returned. I will then forward the papers to the winning government, and the sale will be complete.

"Exactly three weeks from today, each of you will return one of these black leather cases, with the amount you are willing to pay for these papers enclosed in bills of smallest denomination possible, considering the amount you will probably bid, and the space you have available. All bills must be used. No new currency will be acceptable. You will use International currency, and any evidence of marking will render you immediately ineligible to receive the papers."

"When do we get back our money if we are not successful?" asked Hopkins.

"You don't."

Foster looked around the room, taking no little satisfaction from the indignant looks on the faces of his visitors. "No bills larger than one hundred credits in face value will be accepted," he continued, "so you can get some idea of the upper limit we

expect. You'll only be able to cram so much into the cases."

"And what about the other existing model of the device?" asked Volrich. "Who gets that?"

"That will be used to deliver the goods," said Foster.

"Good enough for me," said Hopkins.

Chine and Volrich murmured their assent, and prepared to leave, Chine absently handing the mouse to Foster as he took one of the black leather bags. "One last thing," said Foster, "we'll ask you to return the black bags at eight p.m. That way you'll all know where you stand by midnight.

The three men had not been out of the office ten minutes before Foster was sitting before the new transmitter in the back section of Lombard's laboratory, talking to Hansen.

"... And that's the way it stands," he finished, after giving Hansen a blow-by-blow description of the meeting which had just taken place.

"Well, Foster, you've apparently done a pretty good job," came Hansen's voice from the speaker. "There is only one thing we haven't talked about, and I hope you won't be too upset about it.

"To begin with, I already knew about the meeting. There's a pickup in the office up front, and the whole thing was broadcast through this selfsame transmitter to me as it happened.

"Now, somehow it strikes me that you've been a little inconsistent in

one respect. In all the rehearsals, and in the report you just gave me, you included the caution I told you to give them—not to try coming back one at a time during the next couple of weeks trying to steal a march on each other with an extra pay-off in advance.

"At the meeting itself, you did not warn them about doing this. Now, Foster, if I were the suspicious sort, I might think you were planning a little double cross on this part of the game, or on some other part of it. But I'm not the suspicious sort, and I don't think you'd do a thing like that.

"I'd like to remind you, however," Hansen's voice went on, "that you don't know my true identity, and that I have nothing to fear from you. I know yours from fingerprints to photographs, and I'm very sure I can locate you after this is all over no matter how well you bury yourself. If there's any thought in your mind that might lead to your changing the plan in any way and walking off with all the loot yourself, I'd advise you to drop it."

"Hansen, the thought has never crossed my mind," said Foster angrily. He was about to go on when the speaker interrupted.

"Splendid. I'm glad, because if you had tried anything like that, I think enough hints could be dropped in the right places to indicate that you know how this thing works. Then all I'd have to do is point you out, and sit back to watch the fun. If the gang that would then have the

secret got to you first, your life would end rather suddenly, I think. Without a trial, Foster. If, on the other hand, one of the other two got to you first, well, some of their methods of extracting information are not pleasant. They become particularly unpleasant to people who insist they don't know things the questioners want to find out."

"O.K., O.K." Foster was sweating.

"Now, I think this will be my last broadcast to you. The scramblers in these sets are practically unbreakable, but the boys will be wheeling in directional detectors in a very short while, and I don't want to be sending when that happens. You've got a tape cut with random signals, and the times when these are to be sent.

"So long as the signals keep coming in, I'll know you're acting according to plan. If any of our friends come back with offers before bids close three weeks from now, they are to be refused—sternly. There are very good reasons why they should not be accepted. For your own safety, when you're refusing any that may come, do so obviously, in front of the office window where you can be seen, and practically throw the man that makes the offer out the door. You'll be safer that way. For the rest, we proceed as planned. Good luck."

The speaker squawked briefly, then was silent. Foster cut the switch, stood up, and walked idly over to Lombard's workbench. It was going to be a long three weeks.

In the Pentagon, a group of men were worriedly discussing a report which lay before them. It was dramatically rubber-stamped "Crash Confidential" and each man knew the unusual texture of the paper upon which it was written. Within twelve hours it would begin to blacken and char, and within twenty-four hours there would be nothing left of the copies before them but dust.

". . . And you say these signals leave the laboratory at random hours?" asked the old man at the head of the table.

"Yes," Edmund Chine had replied to the question. "But we notice that they always are exactly sixty seconds in duration, and begin on an even minute, standard time. That is, they never occur twelve seconds after ten o'clock, for instance. They would begin at ten o'clock precisely, and end at ten-oh-one. The next might occur three minutes or three hours later, or any time in between. There doesn't seem to be a pattern."

"Well, there doubtless *is* a pattern, but you haven't uncorked it," said the uniformed man next to Chine.

"Hell, we haven't even uncorked the signal!" exclaimed Chine. "It bounces from AM to FM, and up and down the frequency band from standard broadcast through short wave to VHF and UHF. Most frustrating thing you ever saw. Worse than that, we're not sure we've got all of it down on the oscillographs, so we're not sure we can duplicate exactly the signals we've heard, let

alone mimic the ones he hasn't sent yet."

"Well, I think we'll have to concede defeat, then. Either there is a set of duplicates ready to be forwarded elsewhere if we act up, and he fails to send, or he's sending these signals to trick us into thinking there is. We can't afford to risk the latter." The uniformed man continued, "Let's see those pictures again."

As the uniformed man studied the enlargements, a small man who had the bleached look of an accountant asked, "How did you get those, Chine?"

Chine looked at him scornfully. "I'm not deaf, Fred," he said, tapping the hearing aid which protruded from his coat pocket. The little man smiled archly.

The old man at the head of the table glanced at Chine. "You're certain this field of his is the genuine article?"

"Absolutely."

"And what makes you so sure he's lying when he says he's not the inventor?"

"A lot of little things. First, he has every motive to take that line, from a self-protection point of view. Second, an inventor who's as hungry for a buck as his mythical genius is, wouldn't want to cut anyone else in if he could avoid it. Third, the way he delivered his comments on wanting a quick haul and nothing else came from a man who felt the words as he uttered them, or had heard them repeated in his ear a million times and had rehearsed them over

and over. The former is much more likely. Fourth, he's sent his wife and children away some place, presumably for safety's sake. A man who really felt he wasn't in danger probably wouldn't have done that. Lastly, page seven of that report gives a list of materials of very unusual character which have been ordered by Lombard during the past three months. Particularly the last items." Chine glanced at a man in a lab coat who up to now had been silent.

"We've got a fair idea of what he'd build such a device with," said the technician, "and this list matches up."

"The point is, if you're selling an industrial secret," said Chine, "and you hire a salesman to do it, you don't let the salesman in on the secret of the device to the degree that he can purchase materials for its construction, and then go ahead and build it. You've got no patents, and unless you keep your secret to yourself you're completely unprotected. His story about an associate of his inventing it just doesn't hold water."

"It's thin," said the old man.

"We've got to make an assumption, one way or the other," said Chine.

"Assume he invented it." The old man stirred. "Now go from there."

Chine turned a page of the report, and looked for his place, then continued. "We feel the signal coming from Lombard's laboratory at irregular intervals is received by a mechanical device at an unknown location.

We cannot detect the location, because Lombard's signal is nondirectional, and there's too much spurious radiation in the city for us to detect the weak emissions of the receiver, even if it's unshielded. We think it likely, however, that the mechanical device is simply a trigger affair, set to send a model similar to the one I saw into the hands of the Chinese. Bear in mind the simplicity of such a device."

The technician spoke again. "It would only have to act if the signals stopped coming."

The old man nodded, and Chine went on. "Probably upon receiving the cash bids, Lombard intends to send another signal which will cause the mechanical device to send the second model back to the laboratory. From there he intends to send it to the winning government after resetting its course."

The old man stood up. "There's time," he said, "for me to sleep on this before deciding what is to be done. Is all the meat of this material here?" He looked at Chine while tapping the report with a wrinkled finger.

"Yes, sir."

"Good. I'll mull it over and let you know tomorrow. Would the rest of you please toss those down the disposal slot?"

Each man threw his copy of the report down the slot beside the old man's chair as he watched them file out of the room. The old man sat down again when they were gone, and began to reread the report.

Meanwhile, halfway down the chute that led from the conference room disposal slot to the furnace, a pretty young thing was photographing one of the copies which had just come out of a bypass on the chute. Page by page—the boss would be pleased.

Volrich was angry. ". . . And why I had to come all the way back to Moscow," he was saying, "just to get into a conference on a routine matter completely escapes me. You could have sent your instructions over the usual channels, and they'd have been carried out without the danger that's always involved whenever I enter or leave the United States. I'm a marked man as it is. The only reason the Americans leave me alone is they hope to gain information by my movements, and every time I enter or leave I have to contact others of our organization."

"This is not a routine matter, Dr. Volrich." There was a Ukranian twang to the Security Chief's voice that had always irked Volrich, who prided himself on his ability to speak flawless Russian.

"You still could have sent instructions—"

"Dr. Volrich," the Security Chief interrupted, losing patience, "we have information you have not seen, upon which we need your opinion. Believe me, we have chosen the fastest way. This American report leads us to believe that Lombard is the inventor of this thing."

"He said he wasn't. I told you that."



"Yes, but our technicians say the materials he has bought recently indicate otherwise. The Americans come to the same conclusion."

"Um-m-m." Volrich pursed his lips. "That does put a different light on it."

"They have not covered all the ground, however," put in the Security Chief. "We have still not completely eliminated the possibility that the real inventor is not Lombard, but someone else. Someone else who entered the laboratory unseen, built the models for Lombard, installed the transmitter for him, and got out before the conference. How likely is it?"

"Very unlikely, now that I think of it," said Volrich. "I've had Lombard's habits checked, and they have not changed in the past four years, so far as I can tell, when he opened up the place. Oh, one exception. About three months ago, he sent his wife and children away. His neighbors suspect a family quarrel, but there's nothing definite."

"The Americans uncovered the same thing. They think it's suspicious. A man worried about their safety."

"Well, he'd be worried whether he's telling the truth or not, right now."

"True. Nevertheless, I think they're on the right track. Incidentally, China got some pretty good pictures of the model. Had a camera in that hearing aid of his." The Security Chief threw a stack of enlargements across the desk.

"The nerve!" exclaimed Volrich. "An old gag like that!"

"You should use more old gags. They work."

Volrich snorted, and said, "Well, what about it, then. What do I do?"

"Right now you're coming with me to a meeting," replied the Security Chief, "which will probably last until about four tomorrow morning."

"I see," Volrich scowled. "To go over all the material we've got on this thing at least twenty times, argue, wave our arms, and generally get nothing done."

"Oh, we'll get something done all right. I think I can tell you right now what you'll be doing about this time a week from now."

"Oh?"

"You'll be carrying a black bag full of cash into Lombard's office."

"You're going to pay off?" asked Volrich incredulously.

"Indeed we are." The Chief abruptly smiled. "Can't let the Americans get hold of this thing, you know."

"One of these days you'll believe me when I tell you they're really not that way."

"I believe you now. I hope the Supreme Soviet doesn't though."

"Why?" asked Volrich, amazed.

"Because, my friend, when that day comes, you and I and others like us will be looking for new jobs. Come on, we're late."

The meeting did not go as the Security Chief had thought it would. It was six in the morning when the

two men finally got out of the stuffy council room. And their plans had been altered in one or two slight details. As they drifted off to sleep in their respective chambers, both wondered if looking for a new job would be so bad.

In London, Sir Frances Willingdon-Smith read Major Hopkins' latest report with more than passing interest. On his desk were a number of documents, reports from Moscow and Washington on the subject of Lombard's Force Field. He buzzed for his assistant.

"Sir?"

"Come in, please."

A thin man closed the paneled door behind him, and stood waiting. "Edwards," said Sir Frances, "you know Hopkins personally, don't you?"

"Yes, sir."

"What sort of a chap is he? I mean is he thorough?"

"Exceptionally, sir."

"Um-m-m. Do you think he can carry this off? I mean, it's not our game at all, you know."

"I think so, sir. If you'll pardon me for saying so, I don't see what else he can do."

"Neither do I, and that's the damnable part of it." Sir Frances toyed with the buttons on the telephone. "There's been no indication that anyone else has cottoned to the reason for the three-week delay?"

"No, sir, and I'm certain Major Hopkins said he was only guessing. He said he felt certain that when the man said there was only one device



in existence after the model field generator went into the furnace, it was done in an offhand way that suggested the truth. Really, that's very little to go on."

"But Hopkins feels there may be more than one in existence now."

"He says it is very likely, sir. It would be the best way possible for the man to send his money to safety after completing his part of the bargain."

"Um-m-m. Very well, tell him to proceed as planned. But do caution him to be careful. Any number of things could go wrong."

"Yes, sir." The thin man smiled to himself and closed the paneled door after him.

The three weeks had passed. Foster smiled happily to himself, thinking that within a few short hours he would be able to leave the laboratory. He would be free of the hard cot in the rear section where he had been sleeping, free of the alarm clock which never gave him more than three hours of sleep at a stretch, calling him again and again to send signals that were never answered. No more sandwiches sent down from the coffee shop at the corner. No more washing at the laboratory sink. Champagne and expensive blondes from here on in. His reverie was interrupted by the sound of footsteps approaching on the street outside. For the thousandth time that day he glanced at the clock. Seven forty-five. The footsteps passed by his door and

continued down the street. He scowled.

Suddenly a large black car halted silently outside the office door. Dusk had fallen early, but Foster could see the man who got out easily by the light of the street lamp forty feet away. It was Volrich.

He entered, and wordlessly set the black bag on Foster's desk.

"Thanks, and good-by," said Foster.

"The same," said Volrich. "Do I get a receipt?"

"I'm afraid not."

"Then I'll be on my way." With that Dr. Volrich turned on his heel and left, swinging into the huge car as it moved silently away from the curb. Within the next five minutes Foster had three black bags on his desk, all bulging. Two of them were sealed, the third having been padlocked until Hopkins had removed the lock before leaving.

Hurriedly Foster carried the three bags into the rear of the laboratory. He had to dig the currency out of each one, so tightly was it jammed into place. Carefully he weighed the contents of each bag, and noted the result on the pad beside the delicate scale. Then he added the three figures he had written down, and meticulously calculated the weight of twenty per cent of the total, which was to be his cut. He rechecked his work several times. He smiled contentedly as he heaped currency on the scale until it told him he'd reached the weight of his share, then he began scooping the remainder into

an aluminum box which stood on a bench nearby. He was just pushing home the clamps on the lid of the box when he paused, thinking once again of what he could do with Hansen's share as well as his own. He wondered if Hansen could really finger him as easily as he said he could. "Better play it straight for now," he told himself, "and concentrate on locating Hansen again when this stage of the game's over. Two can play at this stool-pigeon game." He shot home the last clamp.

Foster glanced at the transmitter to make certain it was warm, then put out the lights in the laboratory's rear section. In the darkness he opened the wide door that led to the freight deck at the rear of the building. Outside he could see over the fence that separated the back of Lombard's laboratory from a strip of railway property. A couple of distant red switch signals blinked malevolently at him. He walked to the transmitter blindly and inserted the last piece of tape into the slot. There was a sudden swoosh of air behind him, and something went hurtling out into the night. It did not glow. The glow was for demonstration purposes only.

As the aluminum box shot upward, another field device, a replica of the model Foster had demonstrated was coming toward the open rear door of the laboratory, glowing brightly as it approached the guiding transmitter.

High up in the stratosphere, the aluminum box faltered for a moment

as another transmitter, Hansen's, took control on another wave length. Swiftly it veered off to the north, rising rapidly as it sped ahead.

Foster smiled to himself as he glanced over to the bench where the box had been with Hansen's share of the loot safely tucked inside. He could just see enough in the gloom to be sure the bench was empty. Then he looked out the open door, and saw the glowing object crossing over the railway yard coming in fast. Not too fast to be seen, however. It was the last thing Foster ever saw.

There was a dull plopping sound three feet in front of Foster. He was startled, and moved toward the light switch. Suddenly the room was reeling about him, and before he hit the floor a new darkness, a merciful darkness had closed him in. The model sailed in the open door, and settled to the floor inches from Foster's fallen body. The model's glow faded, but the room never got a chance to become completely dark. Suddenly there was a shattering explosion, followed by a prolonged roar as the fuel tanks of the assay furnace began to feed the flames.

The first trucks arrived within minutes, but they were too late. Lombard's laboratory was a bright inferno which would take hours to cool.

The old man in the Pentagon read Chine's final report without expression.

"At eight o'clock," the report read, "I had safely deposited the

bag of currency with Lombard. He did not seem suspicious. I reached the railway switching tower behind the laboratory within four minutes after that time, and proceeded to observe the activities within. Eleven minutes after nine o'clock the lights within the laboratory were put out, and thirty seconds later I observed the rear door which faced us was being opened. The prevailing darkness prevented me from being certain, but it is reasonable to assume Lombard opened it manually in preparation for what he was about to do.

"At twelve minutes after nine Control informed me another signal was being sent from the laboratory, and eight seconds later the Radar detachment reported.

"Regrettably, at this point, Radar had spotted what they at first took to be an object leaving the laboratory, and what they later claimed was a set error. This object appeared for one sweep only, and while it is possible for a field device to accelerate from ground level to the ceiling of the Radar being used between sweeps, we can see no reason for departure of such a device at this stage unless Lombard tried to send the currency away to a location he deemed safe.

"The Radar operators involved were General Service personnel, entirely unfamiliar with the devices being tracked. This fact alone tends to support the 'error' hypothesis, but in the case that an object did leave the laboratory at 9:12 p.m., it is cer-

tain that it was under the control of the transmitter in the laboratory, and that Lombard was not in it. It probably would not complete its voyage, since the laboratory transmitter was destroyed before it could complete its signal. In this latter case, therefore, we can expect to find the wreckage of a field device in the surrounding countryside. If found, we may expect it to have dropped at least twenty thousand feet when the signal cut out. If found by a foreign agent, aside from the currency which may be found with it, such a wreck is worth very little. We, therefore, have nothing to fear.

"At 9:12:32 the second object reported by Radar appeared, and proceeded glowing brightly across the railway yard. It disappeared into the open rear door of the laboratory.

"The moment I was certain it was inside the building I ordered the mine to be detonated. This had been placed under the building a week before during a time when we were certain Lombard was asleep.

"I feel some commendation should be given the crew who accomplished this difficult assignment. Lombard was never asleep for more than two and a half hours at a time, and at no time could the crew be certain when he would wake next. Consequently the task had to be completed in absolute silence. They were eminently successful.

"The mine was assisted in force by the fuel tanks of Lombard's own furnace, and the degree of destruction was very high. Parts of his body

have been identified, however, and it is certain that he is now dead.

"At one point, just before the object entered the rear door of the laboratory, a man was seen in the shadow of the fence behind the laboratory. It is to be presumed he was a foreign agent, but as no trace of him has been found, we can only conclude that his presence was preliminary to an attempt to seize the incoming device after killing Lombard. We are certain that in this he was unsuccessful."

The old man pursed his lips, and crumpled the single sheet into a tiny ball. The ball was burning slowly in the old man's ash tray when the Security Chief in Moscow finished rubbing the sleep from his eyes.

Volrich had been brief. The Security Chief unfolded the communique hurriedly, cursing all the while at the job which made many of these middle-of-the-night awakenings necessary.

DELIVERED CASH ON SCHEDULE. LOMBARD'S SUSPICIONS DEFINITELY ALLAYED BY SAME. SAW MODEL CONTAINING PAPERS FOR CHINESE RECALLED TO REAR OF BUILDING APPROX. NINE O'CLOCK. DID NOT GET A CHANCE TO USE ROCKET BOMB. EITHER UNITED STATES OR GREAT BRITAIN BLEW HELL OUT OF LABORATORY WHEN MODEL ENTERED. LOMBARD DEAD. AM

TOLD PENTAGON OPERATOR ALSO DEAD. SHE WAS CAUGHT YESTERDAY AND COMMITTED SUICIDE.

RUMORS HERE SAY UNITED STATES OR GREAT BRITAIN FEARED LOSING SECRET MORE THAN THEY WANTED TO HAVE IT. ACTED TO DESTROY SECRET RATHER THAN RISK ANOTHER GOVERNMENT GAINING SAME. APPARENTLY USING SAME TACTICS AS US—DELIVERED CASH ON SCHEDULE, WAITED UNTIL PAPERS RECALLED TO LAB, DESTROYED LAB, LOMBARD AND PAPERS. NO CONFIRMATION POSSIBLE DUE TO PENTAGON LOSS. END.

In London, Sir Frances Willingdon-Smith had also received word of Lombard's death. He read Hopkins' report for the third time.

"At 8:00 precisely, I delivered the required currency to Lombard. I left him almost immediately. At 8:05 the lights in the rear section of the building came on, and after noting with surprise that no one else seemed to be about, I moved to a position outside the building's rear fence. From here I got an excellent view of Lombard's activities through the rear windows of the building. Apparently all three governments responded, because he weighed the contents of three bags including ours quite carefully. He then rechecked his work several times. Unfortunately, I had to leave my position temporarily on

two occasions to avoid being seen by passing vagrants along the railway right-of-way, and I did not see all of what he did. Apparently he had just finished packing the currency into the new device, the existence of which I suspected, you will recall, when I regained position for the second time. I saw him check the transmitter, and then the laboratory lights went out. I was surprised to note this had taken him nearly an hour.

"Almost immediately the rear door of the laboratory opened, and seconds later something swooped over my head, accelerating upward with terrific velocity. It seems obvious to me that he was sending his money to some location from which he could rescue it at a later date. Since we have agreed to discount his implication that he shared his knowledge of these force fields with another, it seems pertinent to mention several confirming points: first, there is very little chance that this object could be traced. It could lose a ground radar of the standard type with exceptional ease. Second, it would not have to be forwarded to another person, whom Lombard would have to pay. It could just as easily have been sent to some inconspicuous building anywhere within a hundred miles. Third, it allowed Lombard to maintain his pretense of being 'simply the salesman,' without danger of losing his fortune through simple robbery. Fourth, that it was not intended to be seen was testified to by the presence of the second

model, which arrived on the scene simultaneously, and very obviously decoyed for it. Since the money-carrying device doubtless crashed when its controlling transmitter was destroyed, it is of no further concern.

"However, the second model was of interest to us. My plan to seize it and the papers it contained before they could be forwarded elsewhere failed, however. I think I underestimated Lombard sadly when I decided to use the new nerve gas on him. I threw my missile, and heard it strike. I waited the required ten seconds, during which period the second model entered the laboratory by the door which was open to my view. I was just about to vault the fence when a terrific explosion laid the fence, the laboratory and myself flat. Fortunately, I awoke just as the fire engines were drawing up, and made my escape in the confusion.

"Obviously Lombard expected trouble during his vulnerable period. Probably he was expecting one of us—or all of us—to jump him the moment the papers and he were together, and the danger of his sending the papers to the Chinese was past. He was not aware, however, that he had been recognized as the inventor of the field. He would, therefore, be expecting at worst, a man with a gun demanding the return of the money, the papers in the model field generator, and the location of the inventor.

"His best defense was perhaps the oldest stratagem in the book, or

something akin to it. An old-fashioned hand grenade of the type which detonates seconds after the thrower's hand pressure is released would probably be his choice. If he were holding such a device, with the pin pulled, he could not be threatened with a gun at short range, since if he were, the gunman would be unable to pull the trigger without destroying himself in the bargain.

"While I admit my explanation seems weak when one considers that one grenade would not have flattened the laboratory in the manner I have described, it would have been more than sufficient to detonate various tanks of oxygen and acetylene present in the building, and indeed the oil tanks drawn up by his furnace.

"I, therefore, admit with shame to what I feel is the result of a misjudgment on my part. The secret of the force field is lost; indeed to all governments, but in particular to us.

(Signed)

Major R. J. Hopkins, O.B.E."

Sir Frances Willingdon-Smith mopped the sweat from his brow with an immaculately clean white handkerchief. Meanwhile, in an isolated barn north of the Canadian Border, Hansen had just finished counting the last of the currency which had arrived on schedule some hours before. The last traces of the uneasiness he had experienced wondering if anyone had traced the high speed money-carrier had vanished. If

they were coming, they would be here by now. He began thinking over his accounts. Credit 4,225,600 International Bank Credits. Debit, 32,755 Credits expenses. Debit, two small field generators and a transmitter. Depreciated value 1,795 credits. Debit, one exceptionally skillful blackmailer, forger, embezzler, counterfeiter, impersonator and common safe cracker. He wondered idly if he would have felt guilty about sending Foster to his death if Foster had not admitted murder in his presence. In any case, he was sure Foster was dead. If he wasn't, he soon would be. The international boys didn't fool.

Hansen tugged at his ear, and thought about his own narrow escape three years before when he first tried to sell his invention. He wondered if he should include in his expenses what it had cost him to find out why they had gunned him down and left him for dead in an alley. No, he thought, chalk it up to experience.

He climbed to the loft of the barn, and hopped into a large glistening machine oddly reminiscent of an automobile without wheels. There was a swishing sound, and the machine, Hansen and 4,225,600 International Bank Credits sped away to a place where Hansen would soon be greeted by a relieved wife and two small children, a place where Hansen was known by another name, and had nothing to do with such things as force fields—

Sir Frances Willingdon-Smith fin-



ished wiping his forehead and began busily to polish his pince-nez. Shame to leave Hopkins feeling badly that way, but there were some things even the best men shouldn't know. Leaks. Leaks everywhere. Can't breathe these days without getting a wire that the Russians know you're doing it.

Lombard, his papers, his laboratory, everything gone. Good, good. Too bad for the fellow, but then Matter of Security, y'know. Mustn't risk getting behind on defense.

The Security Chief in Moscow crumpled the communique, and tossed it in the ashtray. Somebody had beaten him to the punch. Could it mean—? No. He had been too careful. Probably the British had done the bombing. It smelled of their work. Simply a case where they had one chance in three of getting the secret and it wasn't good enough for them. He wondered what they would have done if it had been one chance in two. The current international understanding campaign would have to be stepped up. They couldn't afford to be left out of this sort of thing, and whenever these things came up whether they were or were not, depended on the attitude of the crackpot starting it all. He flipped out the light.

The old man in the Pentagon watched the last spark in the ashtray gutter and go out. He wondered

how soon Moscow would have a copy of the report. Nothing in it they didn't know, anyway. Odd, that filing clerk committing suicide yesterday. The same thing seemed to happen every time a routine check came up. One or two suicides. Never a capture. "This place must be as leaky as a screen door," he mused. Still he had his secrets. The ones he was sure of. He wondered if China suspected his real reason for deciding to mine the laboratory.

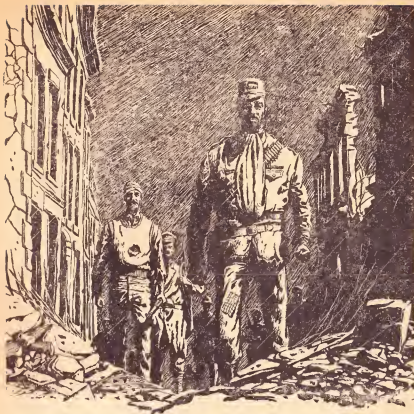
Three Security chiefs, one in Washington, one in London, and one in Moscow relaxed for the first time in three weeks. Each felt certain that the deadly problem had been solved. Each felt secure in the knowledge of the competence of his government, and in particular his own staff, to handle the known and well-explored ways of doing things.

The only threat—the ever-present, yet ever-hidden threat—was those damnable crackpots who, by introducing some new factor that was not understood, and could not be allowed for, removed the world from the old, tried and true *status quo* into some new—and therefore by definition horrible—way of doing things.

Security, in the psychological sense, is the feeling that you can handle the situation at hand. Fear comes when you suspect you can't.

Three Security chiefs once more had security.

THE END



# MARIUS

*It's terribly hard to see, and think clearly, about the long future, when the immediate present seems so violently pressing. It's hard to save the seed-grain, during a famine . . . or to withhold military power, when that annoying dispute could be settled quickly. . . .*

**BY POUL ANDERSON**

*Illustrated by van Dongen*

It was raining again, with a bite in the air as the planet spun toward winter. They hadn't yet restored the street lights, and an early dusk seeped up between ruined walls and hid the tattered folk dwelling in caves grubbed out of rubble. Etienne Fourre, chief of the Maquisard Brotherhood and therefore representative of France in the Supreme Council of United Free Europe, stubbed his toe on a cobblestone. Pain struck through a worn-out boot, and he swore with tired expertness. The fifty guards ringing him in, hairy men in a patchwork of clothes—looted from the uniforms of a dozen armies, their own insignia merely a hand-sewn Tricolor brassard—tensed. It was an automatic reaction, the bristling of a wolf at any unawaited noise, long ago drilled into them.

"*Eh, bien,*" said Fourre. "Perhaps Rouget de l'Isle stumbled on the same rock while composing the '*Marseillaise*.'"

One-eyed Astier shrugged, an almost invisible gesture in the murk. "When is the next grain shipment coming?" he asked. It was hard to think of anything but food above the noise of a growling belly, and the Liberators had shucked military formalities during the desperate years.

"Tomorrow, perhaps, or the next day, if the barges aren't waylaid by river pirates," said Fourre. "And I don't think they will be, this close to Strasbourg." He tried to smile. "Be of good cheer, my old. Next year there should be an ample har-

vest. The Americans are shipping us a new blight-preventive."

"Always next year," grumbled Astier. "Why don't they send us something to eat now?"

"The blights hit them, too. It is the best they can do for us. Had it not been for them, we would still be skulking in the woods sniping at Russians."

"We had a little something to do with winning."

"More than a little, thanks to Professor Valti. I do not think any of the free people could have won without all the others."

"If you call this victory," Astier's soured voice faded into silence. They were passing the broken cathedral, and it was known that childpacks often hid there. The little wild ones had sometimes attacked armed men with their jagged bottles and rusty bayonets. But fifty soldiers were too many, of course. Fourre thought he heard a scuttering among the stones; but it might only have been the rats. Never had he dreamed there could be so many rats.

The thin sad rain blew into his face and weighted his beard. Night rolled out of the east, as if it were a message from Soviet lands plunged into chaos and murder. But we are rebuilding, he thought defensively; each week the authority of the Strasbourg Council reached a civilizing hand farther into the smashed lands of Europe. In ten years, five perhaps—automation was so fantastically productive, if only you could get hold of the machines in the first

place—the men of the West would again be peaceful farmers and shopkeepers, their culture again a going concern.

If the multinational Councilors made the right decisions. And they had not been making them. Valti had finally convinced Fourre of that. Therefore, he walked through the rain, hugging an old bicycle poncho to his sleazy jacket, and men in barracks were quietly estimating how many jumps it would take to reach their racked weapons. It would be necessary to overpower those who did not agree.

A wry thought, that the ancient feudal principle of personal loyalty to a chief should have to be invoked to enforce the decrees of a new mathematics that only some thousand minds out of all the world understood. But you wouldn't expect the Norman peasant Astier or the Parisian Apache Renault to bend the scanty spare time of a year to learning the operations of symbolic sociology. You would merely say, "Come," and they would come because they loved you.

The streets resounded hollow under his feet. It was a world without logic, this one. Only the accidents of survival had made the village apothecary Etienne Fourre into the *de facto* commander of Free France. He could have wished those accidents had taken him and spared Jeanette, but at least he had two sons living, and some day, if they hadn't gotten too much radiation, there would be

grandchildren. God was not altogether revengeful.

"There we are, up ahead," said Astier.

Fourre did not bother to reply. He had never been under the common human necessity of forever mouthing words.

Strasbourg was the seat of the Council because of its location and because it was not too badly hit. It had been a conventional battle with chemical explosives which rolled through it, eighteen months ago. The University had almost completely escaped destruction, so Jacques Reinach had his headquarters there. His men prowled about on guard; one wonders what Goethe would have thought, could he have returned to the scene of his student days. And yet it was men such as this, with dirty hands and clean weapons, who were civilization. It was their kind who had harried the wounded Russian colossus out of the West and who would restore law and liberty and wind-rippled fields of grain. Some day. Perhaps.

There was a machine-gun nest at the first check point. The sergeant in charge recognized Fourre and gave a sloppy salute. (Still, the fact that Reinach had extorted so much discipline from his horde spoke for the man's personality.) "Your escort must wait here, general," he said, half apologizing. "It is the new regulation."

"I know," said Fourre. Not all of his guards did, and there was a snarling which he shushed. "I have

an appointment to see the Commandant."

"Yes, sir. Please stay to the lighted paths. Otherwise you might be shot by mistake for a looter."

Fourre nodded and walked through, onto the campus. His body wanted to get in out of the rain, but he went slowly, delaying the moment. Jacques Reinach was, after all, not only his countryman but his friend. He was nowhere near as close to, say, Helgesen of the Nordic Alliance, or the Italian Totti, or Rojansky of Poland, and he positively disliked the German Auerbach.

But Valti's matrices were not concerned with a man's heart. They simply told you that given such-and-such conditions, this-and-that would probably happen. It was a cold knowledge to bear.

The Headquarters building was a loom of darkness, but a few windows glowed at him. Reinach had had an electric generator set up—and very rightly, of course, when his tired staff and his tired self must often work around the clock.

A sentry admitted Fourre to an outer office. There were half a dozen armed men picking their teeth in it and dicing for cartridges while a tubercular secretary coughed over files written on old laundry bills, flyleaves, any scrap of paper that came to hand. They all stood up, and Fourre told them he had an appointment with the Commandant, chairman of the Council.

"Yes, sir." The officer was still in

his teens, fuzzy face already shriveled into old age, and spoke very bad French. "Just check your weapons with us and go on in."

Fourre unbuckled his guns, reflecting that this latest requirement, disarming commanders before they could see Chairman Reinach, was what had driven Alvarez into fury and the conspiracy. Yet the regulation was not unreasonable—Reinach must know of gathering opposition, and all the people had grown much too used to settling disputes with weapons. Ah, well, Alvarez was no philosopher but he was boss of the Iberian Irregulars and you had to use what human material was available.

The officer frisked him, and that was a wholly new indignity which heated Fourre's own skin. He choked his anger, thinking that Valti had predicted as much.

Down a corridor then, that smelled moldy in the autumnal darkness, and to a door where one more sentry was posted. Fourre nodded at him and opened the door.

"Good evening, Etienne. What can I do for you?"

The big blond man looked up from his desk and smiled. It was a curiously shy, almost a young smile, and something wrenched within Fourre.

This had been a professor's office, before the war. Dust was thick on the books that lined the walls. Really, they should take more care of books, even if it meant giving less attention to famine and plague and banditry.

There was a window closed at the rear, with a dark wash of rain flowing across miraculously intact glass. Reinach sat with a lamp by his side and his back to the night.

Fourre lowered himself, the visitor's chair creaked under a gaunt-fleshed but heavy-boned weight. "Can't you guess, Jacques?" he asked.

The handsome Alsatian face, one of the few clean-shaven faces left in the world, turned to study him for a while. "I wasn't sure you were against me, too," said Reinach. "Helgesen, Totti, Alexios . . . yes, that lot . . . but you? We have been friends for many years, Etienne. I didn't think you would turn on me."

"Not on you." Fourre sighed and wished for a cigarette, but tobacco was a remote memory. "Never you, Jacques. Only your policies. I am here, speaking for all of us—"

"Not quite all," said Reinach. His tone was quiet and unaccusing. "Only now do I realize how cleverly you maneuvered my firm supporters out of town. Brevoort flying off to Ukraina to establish relations with the revolutionary government; Ferenczi down in Genoa to pick up those ships for our merchant marine; Janosck talked into leading an expedition against the bandits in Schleswig. Yes, yes, you plotted it carefully, didn't you? But what do you think they will have to say on their return?"

"They will accept a *fait accompli*, if they must," answered Fourre. "This generation has had a bellyful

of war. But I said I was here to speak to you on behalf of my associates. It was hoped you would listen to reason from me, at least."

"If it is reason." Reinach leaned back in his chair, cat-comfortable, one palm resting on a revolver butt. "We have threshed out all the arguments in council. If you bring them up again . . ."

". . . It is because I must." Fourre sat looking at the scarred bony hands in his lap. "After all, Jacques, we understand that the chairman of the Council must have supreme power for the duration of the emergency. We all agreed to give you the final word. But not the *only* word."

A paleness of anger flicked up in the blue eyes. "I have been maligned enough," said Reinach coldly. "They think I want to set myself up as a dictator. Etienne, after the Second War was over and you went off to become a snug civilian, why do you think I elected to make the Army my career? It was not because I had any taste for militarism. It was only that I foresaw our land would again be in danger, within my own lifetime, and I wanted to hold myself ready. Does that sound like . . . like some new kind of Hitler?"

"No, of course not, my friend. And when we chose you to lead our combined forces, we could not have chosen a better. Without you—and Valti—there would still be war on the eastern front. We . . . I . . . we think of you as our deliverer, just as if we were the humblest peasant

given back his own plot of earth. But you have not been *right*."

"We all make mistakes." Reinach actually smiled. "I admit my own. I bungled badly in cleaning out those communists at—"

Fourre shook his head, stubbornly. "You don't understand, Jacques. It isn't that kind of mistake I mean. Your great error is that you have not realized we are at peace. The war is over."

Reinach lifted a sardonic brow. "Not a barge goes up the Rhine, not a kilometer of railroad track is relaid, but we have to fight bandits, local war lords, half-crazed fanatics of a hundred new creeds. Does that sound like peacetime?"

"It is a difference of . . . of objectives," said Fourre. "And man is such an animal that it is the end, not the means, which makes the difference. War is morally simple: one purpose, to impose your will upon the enemy. Not to surrender to an inferior force. But a policeman? He is protecting an entire society of which the criminal is also a part. A politician? He has to make compromises, even with small groups and people he despises. You think like a soldier, Jacques, and we no longer want or need a soldier commanding us."

"Now you're quoting that senile fool Valti," snapped Reinach.

"If we hadn't had Professor Valti and his sociosymbolic logic to plan our strategy for us—we would still be locked with the Russians. There was no way for us to be liberated

from the outside, this time. The Anglo-Saxon countries had too much to do in Asia, besides all their internal difficulties. We had to liberate ourselves, with ragged men and bicycle cavalry and aircraft patched together out of wrecks. If it weren't for Valti's plans—and, to be sure, your execution of them—we could never have done it." Fourre shook his head again. He would *not* get angry with Jacques. "I think such a record entitles the professor to respect."

"It did . . . then," said Reinach. His tone lifted and grew rapid. "But he's senile now, I tell you. Babbling of the future, of long-range trends—Can we eat the future? People are dying of plague and starvation and anarchy *now*!"

"He has convinced me," said Fourre. "I thought much the same way, too, a year ago. But he instructed me in the elements of his science, and he showed me the way we are heading. He is an old man, Eino Valti, but there is still a brain under that bald pate."

Reinach relaxed. A tolerant warmth played across his lips. "Very well, Etienne," he asked, "what way *are* we heading?"

Fourre looked past him, into night. "Toward war," he said, quite softly. "Another nuclear war, some fifty years hence. It isn't certain the human race itself can survive that."

Rain stammered on the window-panes. It was falling hard now, and wind hooted in the empty streets.

Fourre glanced at his watch. There wasn't much time left. He fingered the police whistle hung about his neck.

Reinach started. Then, gradually, he eased back. "If I thought that were true," he replied, "I would resign this minute."

"I know you would," mumbled Fourre. "That is what makes my task so hard for me."

"But it isn't true," said Reinach. His hand waved as if to brush away a nightmare. "If only because people have had such a grim lesson that—"

"People, in the mass, don't learn," Fourre told him. "The only way to prevent future wars is to set up a world-peace authority—to reconstitute the United Nations and give it some muscles. And Europe is crucial to that enterprise. North of the Himalayas and east of the Don there is nothing any more—howling cannibals. It will take too long to civilize them again. It is *we* who must speak for the whole Eurasian continent."

"Very good, very good," said Reinach impatiently. "Granted. But what am I doing that is so wrong?"

"A great many things, Jacques. I could give you a long list." Fourre's head turned, slowly, as if it creaked on its neckbones, and locked eyes with the man behind the desk. "It is one thing to improvise in wartime. But you are improvising the peace. You forced the decision to send only two men to represent all our nations at the conference planned in Rio. Why? Because we're short

on transportation, clerical help, paper—even on decent clothes! The problem should have been studied. It may be all right to treat Europe as a unit—or it may not; perhaps this decision will only exacerbate nationalism. You made the decision in one minute when the question was raised, and you would not even hear debate."

"Of course not!" said Reinach harshly. "If you remember, that was the day we learned of the Neofascist coup in Corsica."

"Corsica could have waited a while. It would have been more difficult to win back, yes, if we hadn't struck at once—but this business of our UN representation could decide the entire future of—"

"I know, I know! Valti and his theory about the 'pivotal decision.' Bah!"

"The theory happens to work, my old."

"In its proper place. I'm a hard head, Etienne, I admit it." Reinach leaned across the desk, chuckling. "Don't you think the times demand a hard head? When hell is romping loose, it is no time to spin fine philosophies . . . or try to elect a parliament, which I understand is another of the postponements Dr. Valti holds against me."

"It is," said Fourre. "Do you like roses?"

"Why, why . . . yes." Reinach blinked. "To look at, anyway." Wistfulness crossed his eyes. "Now that you mention it, it's been many years since I last saw a rose."



"But you don't like gardening. I remember that from . . . old days." The curious tenderness of man for man, which no one has ever quite understood, tugged at Fourre. He cast it aside, not daring to do otherwise, and said impersonally: "And you like democratic government, too, but were never interested in the grubby work of maintaining it. There is a time to plant seeds. If we delay, it will be too late, strong-arm rule will have become too much of a habit."

"There is also a time to keep alive. Just to keep alive, nothing else."

"I know. Jacques, I can't accuse you of hard-heartedness. You are a sentimentalist: you see a child with belly bloated from hunger, a house marked with a cross to show that the Black Death has walked in—and you feel too much pity to be able to think. It is . . . Valti, myself, all of us . . . who are cold-blooded—who are prepared to sacrifice a few thousand more lives now, by neglecting the immediately necessary, for the sake of saving all humankind fifty years hence."

"You may be right," said Reinach. "About your cold souls, I mean." His voice was so low that the rain almost drowned it.

Fourre looked at his watch. Scant time remaining—this had been taking longer than expected. He said in a slurred, hurried tone: "What touched off this affair was the Papandrou business."

"I thought so," agreed Reinach

evenly. "I don't like it either. I know as well as you do that Papandrou is a murderous crypto-communist scoundrel whose own people hate him. But curse it, man—don't you know rats do worse than steal food and gnaw the faces of sleeping children? Don't you know they spread plague? And Papandrou has offered us the services of the only efficient rat-exterminating force in Eurasia. All he asks is that we recognize his Macedonian Free State and give him a seat on the Council."

"It is too much to pay," said Fourre. "In one or two years we can bring the rats under control ourselves."

"And meanwhile?"

"Meanwhile, we must hope that nobody we love is taken sick."

Reinach grinned without mirth. "It won't do," he said. "I can't agree to that. If Papandrou's squads help us, we can save a year of reconstruction, a hundred thousand lives—"

"And throw away lives by the hundred millions in the future!"

"Oh, come now! One little province like Macedonia?"

"One very big precedent," said Fourre. "We will not merely be conceding a petty war lord the right to his loot. We will be conceding"—he lifted hairy hands and counted off on the fingers—"the right of any dictatorship, anywhere, to exist at all—which right, if yielded, means war and war and war again; the fatally outmoded principle of unlimited national sovereignty; the friendship of an outraged Greece,

which is sure to invoke that same principle in retaliation; the inevitable political repercussions throughout the Near East, which is already turbulent enough; therefore war between us and the Arabs, because we *must* have oil; a seat on the Council to a clever and ruthless man who frankly, Jacques, can think rings around you—*No!*"

"You are theorizing about tomorrow," said Reinach. "The rats are already here. What would you have me do instead?"

"Refuse the offer. Let me take a bicycle brigade down there. That will be enough to knock Papandrou to hell—unless we let him get too strong first."

Reinach shook his head, good-

naturedly. "Who is the war monger now?" he laughed.

"I never denied there is still a great deal of fighting ahead of us," said Fourre. Sadness tinged his voice, he had seen too many men spilling their life blood on the ground. "I only want to be sure it will serve the final purpose—that there shall never again be a world war. That my children and grandchildren will not have to fight at all."

"And Valti's equations show the way to achieve that?" asked Reinach quietly.

"They do."

"I'm sorry, Etienne." Reinach shook his head. "I simply cannot believe it. Turning human society into a . . . what is it? . . . a poten-



tial field, and operating on it with symbolic logic—it's too remote. I am here, in the flesh—such of it as is left on our diet—not in a set of scribbles made by some gang of long-haired theorists."

"It was a similar gang which, well, discovered atomic energy," said Fourre. "Yes, Valti's science is young. But within its admitted limitations, *it works*. If you would only study it—"

"There's too much else to do." Reinach shrugged. A blankness seemed to draw across his face. "We've wasted too much time already. What is it you, your group of generals, wants me to do?"

Fourre gave it to him, as he knew his comrade would wish it, hard and straight like a bayonet thrust. "We ask for your resignation. Naturally, you'll keep a seat on the Council, but Professor Valti will assume the chairmanship and set about making the reforms we want. We will issue a formal promise to have a constitutional convention in the spring and dissolve the military government within one year."

Then he bent his head and looked at the time. There was a minute and a half remaining.

"No," said Reinach.

"But—"

"Be still!" The Alsatian stood up. The single lamp threw his shadow grotesque and enormous across the dusty books. "Do you think I didn't see this coming? Why do you imagine I only let one man at a time

in here, and disarm him? The devil with your generals! The common people know me, they know I stand for them first—and hell! take your misty futures! We'll meet the future when it comes!"

"That is what man has always done," said Fourre. He spoke like a beggar. "And that is why the race has always blundered from one catastrophe to the next. This may be our last chance to change the pattern."

Reinach began pacing, up and down behind the desk. "Do you think I like this miserable job?" he answered. "It simply happens that no one else can do it."

"So now you are the indispensable man," whispered Fourre. "I had hoped you would escape that."

"Go on home, Etienne." Reinach halted, and there was kindness returning to him. "Go back and tell them I won't hold this against them personally. You had a right to make your demand. Well, it has been made and refused." He nodded to himself, thoughtfully. "There will have to be some changes in our organization, though. I don't want to be a dictator, but—"

Zero hour. Fourre felt very tired.

He had been refused, and so he had not blown the whistle that would stop the rebels, and it was out of his hands now.

"Sit down," he said. "Sit down, Marius, and let us talk about old times for a while."

Reinach looked surprised. "Marius? What do you mean?"

"Oh . . . it was an example from

history which Professor Valti gave me." Fourre considered the floor. There was a cracked board by his left toe. Cracked and crazy, a tottering wreck of a civilization . . . how had the same race built Chartres and the hydrogen bomb?

His words dragged out of him: "In the second century before Christ, the Cimbri and their allies, Teutonic barbarians, came down out of the north. For a generation they wandered about, ripping Europe apart. They chopped up the Roman armies sent to stop them. Finally they invaded Italy. It did not look as if they could be halted before they took Rome itself. But there was one general by the name of Marius who rallied his men. He met the barbarians and annihilated them."

"Well . . . thank you." Reinach sat down, puzzled. "But—"

"Oh, never mind." Fourre's mouth twisted into a smile. "Let us take a few minutes free and just talk. Do you remember that night after the Second War, we were still just boys freshly out of the Maquis, and we tumbled around the streets of Paris and toasted the sunrise from *Sacre Coeur*?"

"Yes . . . to be sure. That was a wild night!" Reinach laughed. "How long ago it seems! What was your girl's name? I've forgotten."

"Marie. And you had Simone . . . a beautiful little baggage, Simone. I wonder whatever became of her?"

"I don't know. The last I heard— No. Remember how bewildered the waiter was when—"

A shot cracked through the rain, and then the wrathful clatter of machine guns awoke. Reinach was on his feet in one tiger bound, pistol in hand, crouched by the window. Fourre remained seated.

The noise lifted, louder and closer. Reinach spun about and his gun muzzle glared emptily at Fourre.

"Yes, Jacques."

"*Revolt!*"

"We had to." Fourre discovered that he could again meet Reinach's eyes. "The situation was that crucial. If you had yielded . . . if you had even been willing to discuss the matter . . . I would have blown this whistle and nothing would have happened. Now it's too late, unless you want to surrender. If you do, our offer still stands. We still want you to work with us."

A grenade blasted somewhere nearby.

"You—"

"Go on and shoot. It doesn't matter very much."

"No—" The pistol wavered. "Not unless you— Stay where you are! Don't move!" The hand Reinach passed across his forehead shuddered. "You know how well this place is guarded. You know the people will rise to my side—"

"I think not. They worship you, yes, but they are tired and starved. Just in case, though, we staged this for the nighttime. By tomorrow morning it will all be over." Fourre spoke like a rusty machine. "The barracks have already been seized. Those more distant noises are the

artillery being captured. The University is surrounded, and cannot stand against an attack."

"This building can!"

"So you won't give up, Jacques?"

"If I could do that," said Reinach, "I wouldn't be here tonight."

The window broke open. Reinach whirled. The man who was vaulting through shot first.

The guard outside the door looked in. His rifle was poised, but he died before he could use it. Then men with black clothes and blackened faces were swarming across the sill.

Fourre knelt beside Reinach. A bullet through the head—it had been quick, at least. But if it had struck farther down, perhaps Reinach's life could have been saved. Fourre wanted to weep, but he had forgotten how.

The big man who had killed Reinach ignored his commando to stoop over the body with Fourre. "I'm sorry, sir," he mumbled. It was hard to tell whom he was speaking to.

"Not your fault, Stefan." Fourre's tone jerked.

"We had to run through the shadows, up under the wall . . . I got a boost through this window—there wasn't time to take aim. I didn't even realize who it was till—"

"It's all right, I said. Go on, now, take charge of your party, get this building cleaned out. Once we hold it, the rest of his boys should give up pretty soon."

The big man nodded and went out into the corridor.

Fourre crouched by Jacques Reinach while a sleet of bullets drummed on the outer walls. His heard them only dimly. Most of him was wondering if perhaps this hadn't been the best ending. Now they could give their chief a funeral with full military honors, and later they would build a monument to the man who saved the West, and—

And it might not be quite that easy to bribe a ghost. But you had to try.

"I didn't tell you the rest of the story, Jacques," he said. His hands were like a stranger's, using his jacket to wipe up the blood, and his voice ran on of itself. "I wish I had . . . maybe you would have understood . . . and maybe not. Marius went into politics afterward, you see. He had all the prestige of his victory behind him, he was the most powerful man in Rome, but he did not understand politics. There followed a witch's dance of corruption, murder, and civil war . . . fifty years of it, the final extinction of the Republic. Caesarism only gave a name to what had already been done.

"I would like to think that I helped to spare Jacques Reinach the name of Marius."

Rain slanted in through the broken window. Fourre's hands reached out and closed the darkened eyes. He wondered if he would ever be able to close them within himself.

THE END



# THE REFERENCE LIBRARY

BY P. SCHUYLER MILLER

## SCALPEL AND ROSES

The high-school girl who used to make the best milk shakes in Pittsburgh, before she got a better-paying job, finally got up courage to ask why I had a different science-fiction book under my arm every time I came in. And her reaction to the explanation went deeper than she knew: "You mean you get paid for writing *book reports*?"

As Anthony Boucher makes quite clear in his introduction to *damon knight's "In Search of Wonder"* (Printer: please observe the unconviction, and grant knight his niche

with e.e. cummings and archie), he and I and most of the rest of us have been giving you book reports, while *damon knight* has been writing criticism. We try to tell you what's in a book, and our guess as to whether you'll like it. *Damon knight's* method, as he explains at the beginning of his chapter on "Chuckleheads," is "to take things apart. The critic uses the same sharp-edged tools on all stories, but good stories resist; bad ones come to pieces."

There's a corollary that he might have pointed out. If you take anything as intricately constructed as

a story apart with the kind of dull tools that present-day butchers seem to use on chickens, all you find inside is a mess of mashed muscles, splintered bone, and macerated organs. But if you dissect with a scalpel, as knight does, you learn what has kept the thing alive or whether it's better dead.

This book is a collection of critical essays on science fiction which have appeared in six or seven prozines and as many of the better fanzines, during the last few years. It will probably not mean much to the general reader who has no background in science fiction, but it should take its place with the Day "Index," the Bleiler-Dikty "Checklist," Lloyd Eshbach's "Of Worlds Beyond," and Sam Moskowitz's "Immortal Storm," as one of the major books about science fiction written from the inside and published primarily as a labor of love. You'll probably have to get it directly from the publisher—Advent: Publishers, 3508 N. Sheffield, Chicago 13, Illinois—or from a specialist bookseller. The price will be \$4.00.

Knight has worked, from the beginning, on a very clear-cut basis: that the same critical standards—originality, sincerity, style, construction, logic, coherence, sanity, garden-variety grammar—can be applied to science fiction as to any other type of literature; and that a bad book hurts science fiction more than ten bad notices. He applies his rules honestly and mercilessly, but believe

me, when damon knight buys roses—as he does most notably for Robert Heinlein—they're beauties! And all this has not been lost on the serious wing of fandom—the ones who take the trouble to vote at conventions. They awarded damon knight the first critic's "Hugo" in New York, last Labor Day. (This magazine, if you haven't heard, kept its top rating.)

I hope that, financially, this book will at least get its publishers their money back, because they may then be inclined to give damon knight *carte blanche* to do a similar, and more connected, appraisal of the whole science-fiction-fantasy field, past and present. I know what he thinks of Merritt and Lovecraft, but I'd like to know why. I'd like to hear him on Verne, Wells, Taine, Doc Smith, Ray Cummings, and the "good old days." He was one of the two reviewers who sent me book nominations for our "Best Books" poll—the other was August Derleth—and it was a characteristically individual list which included, "Doc" will be interested to know, two E. E. Smith space operas. But "In Search of Wonder" is unfortunately an appraisal only of books that have appeared since 1952, except where something older is brought in to illustrate a point, and it does not cover all the "important" books of the productive '50s, by any means.

It's probably clear, by now, that I like "In Search of Wonder" immensely. If you look at the set of

unbound signatures I brought back from the Convention, you'll find the early ones slightly spotted with bath water, the next few mildly contaminated with bacon grease, and a few drops of kosher pickle juice still farther on. It was a one-sitting reading, in other words, that began when I got up and didn't quite last through to dinner. I agree with most of the analysis—and disagree with some of the judgments.

The one flaw I can point to in the knight method is that you can't always see the whole animal from the results of a dissection, any more than an archeologist can really reconstruct the life and thoughts of a people from their excavated artifacts. Like it or not, critically, there is something in Robert Howard's "Conan" tales, in Merritt's best, in Lovecraft if taken in small doses, in Hodgson's "Night Land," and many more, that makes them memorable in spite of the fact that they fall apart when you unscrew the bolts with which the authors put them together. A. E. van Vogt gets a merciless drubbing—yet in spite of inconsistencies, illogic, and all the rest, "The World of A" has a cumulative effect greater than the sum of its flawed, reused, and not-quite-fitting parts. Conversely, to me, all the precision-machining in Heinlein's "Puppet Masters" doesn't give the book as strong an over-all effect as some of his juveniles.

I think, too, that it is unjust to condemn a book like "The Blind Spot" for not being something it

never pretended to be when it was written. The science-fiction concept hadn't emerged in 1921; Hall and Flint were writing fantasy, as Merritt was. Their whole structure of interlocking worlds was more out of Madame Blavatsky than out of Einstein; their "magnetism" was the "animal magnetism" of the previous century and owed nothing to Clark-Maxwell, and the "vibration" concept was still floating around in popular or pseudo-science circles a decade later. The story as a whole cast a spell that has made it a remembered "classic," even if the carpentry and design is shoddy.

Personally, I like to sit back around the tenth row in a theater, so that I can't see—and see past—the actors' makeup. I *want* the illusion to get over. I'm afraid *damon knight* is right up there in the front row, where he can see the edges of the hair-pieces.

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TO LIVE FOREVER, by Jack Vance.  
Ballantine Books, New York.  
1956. 185 pp. \$2.75; paper 35¢

For me, this elaborately constructed original novel of an immortality-directed society doesn't quite come off. The hero is as ruthless as a Mickey Spillane gut-blaster, none of the other characters are much more sympathetic, and the wealth of detail that is characteristic of Jack Vance fails to make a total picture. (He has, incidentally, performed one worthy service in producing a future



world whose place-names are not phonetic anagrams of our present geographical divisions.)

One basic flaw, I think, is the old one of stopping the story in its tracks from time to time to spell out the background from the author's lectern. Maybe Charles Laughton can get away with it when he reads Dickens, but we've come a long way from the days when we all did it in every story and thought it was good and necessary writing.

We are taken into an overpopulated world which has set up a series of castes or phyle (sic), based vaguely on achievement, membership in which conveys both social status and longer life. The unregistered masses, the glarks, average an age of eighty-two, and the same age-span is assigned to the base or "Brood" level of the registered segment. Making the second grade, "Wedge," is worth ten more years of life; third gives sixteen more; "Verge" adds twenty. The ultimate brotherhood known as Amaranth enjoys immortality, the mechanism for which is a Gosseyn-like system of multiple bodies into which the individual's personality can be switched.

The glark known as Gavin Waylock is actually the Grayven Warlock—the blurb calls him John, for some reason—an Amaranth journalist who was tricked into what passed for murder, escaped, was considered dead, and devised a scheme for reappearing as one of his alter egos and regaining his Amaranth rank

and his vengeance. He goes about it with no regard whatever for anyone who gets in his way or threatens his security, and the story heads doggedly for a climax about as bloody as the last act of "Hamlet," then leapfrogs into a finale as controversial as the end of "The Humanoids."

It may be that Vance is merely showing us, with brutal consistency, that his kind of society will produce Waylock's kind of man. The book should have had the grisly fascination of Fritz Leiber's unforgettable "Coming Attraction." Parts of it almost reach that peak; others miss and drag the whole down with them. So try again. . . .

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RACES AND PEOPLE, by William C. Boyd and Isaac Asimov. Abelard-Schuman, New York. 1955. 189 pp. \$2.75

This is the second in a series of scientific reference books for teenagers, that Isaac Asimov is writing. It is clearly a book for young people—in fact, I have known junior high school pupils who could have read and understood it—but it should be useful to their parents and some of their teachers who are scared off by the more technical side of genetics and anthropology.

I had not, by the way, realized until I spotted this book that Asimov's colleague at Boston University, and half the "Boyd Ellanby" science-fiction team, is the same Dr.

ASTOUNDING SCIENCE FICTION

William C. Boyd who wrote the classic "Genetics and the Races of Man," and pointed the direction that racial studies now seem to be following.

What you get in "Races and People" is a very simple, quite well illustrated primer in genetics and racial diversification. It begins by pointing out the impossibility of drawing clear lines between so-called racial groups, goes on to spell out the genetic mechanism of heredity, and closes by presenting the data and offering tentative racial groupings, based on the possession of different combinations of the different blood groups. There are, for the record, six (with a vague seventh): aboriginal Australian; American Indian; Asian; African; European; Early European (Basque); and a possible Indo-Dravidian.

Recommend this to your high-school librarian and go get Boyd's other book.

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THREE TO CONQUER, by Eric Frank Russell. Avalon Books, New York. 1956. 224 pp. \$2.50

When this book was serialized in ASF in 1955, it had a better title: "Call Him Dead." It was overshadowed by the remarkable "Under Pressure" which followed it, but it was—and is—still a good mixture of telepathy and detection, around a core of extraterrestrial invasion rather like Jack Finney's "Body Snatchers."

If you remember, Wade Harper is a designer and manufacturer of micro-manipulator devices—Heinlein would have made this fact an essential of the plot—who is also a potent telepath. He has used his ability before to track and trap criminals; as the story opens, he is "listening" to the dying thoughts of a State trooper, gunned down under very peculiar circumstances. Fifty-three pages later he is pouring a gunful of peculiar slugs into a young girl he has never seen before, and five pages after that he is walking into FBI headquarters and probing the country's top brass into a hunt for three men who have flown secretly to Venus and returned as something not really human.

Harper and his associates in the hunt are believable people, and the book is consequently several notches above its plot. All of which is to say that there is very little new in science fiction any more: it's *how* a story is written that counts, not the cute gimmick or trick ending. And Eric Frank Russell handles words very well.

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EARTH SATELLITES, by Patrick Moore. W. W. Norton & Co., New York, 1956. 157 pp. \$2.95

Patrick Moore is a competent astronomer, co-author with H. Percy Wilkins of the definitive atlas-gazetteer of the Moon, and a popularizer who leaves astrophysics and deep theory to the Hoyles. He has

now done a very elementary little popular introduction to the IGY satellites, which someone—I assume the publisher—has seen fit to louse up with a confusing hodge-podge of good scientific diagrams and gagged-up steals from the science-fiction and humor magazines. This may have been justified by the author's low opinion of science fiction—and of other astronomers who like the meteoric, rather than the volcanic, theory of the lunar craters. Many of the drawings by Irving Geis are lifted with no credit, others—glamor-gals from s-f magazine covers—are identified, and Fred Freeman's handsome double-page sectional drawing of a von Braun satellite station, from "Across the Space Frontier," is lampooned to the point where the reader who doesn't recognize it will be totally bewildered.

As for text, you get the usual background material on how rockets work, what the planets are like, and what we can learn from the unmanned satellites that will soon be in space—or may already be there, as you read this. The diagrams that are serious are good. Incidentally, the author points out that Jules Verne launched his moon-projectile in Florida, only a few hundred miles from Cape Canaveral, where the "Vanguard" satellites will take off.

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INSIDE THE ATOM, by Isaac Asimov.  
Abelard-Schuman, New York.  
1956. 176 pp. \$2.75

Isaac Asimov, in between science-fiction yarns, is writing a series of science books for teen-agers, which I hope the schools are using. Since I know nothing about biology, a little about anthropology, and quite a lot about chemistry and physics—in their simpler forms—my own interest in the three books he has done so far has dropped steadily from "The Chemicals of Life" to "Races and People"—with William C. Boyd—to the present book on atoms and atomic energy. But to the youngster who is developing an interest in science, or to the teacher who has to teach the stuff with next to no preparation, "Inside the Atom" is right up to the level of its companions.

Excellent diagrams by John Bradford go a long way toward making the simply stated facts of atomics crystal-clear. We all know that Asimov can do it; let's congratulate his publisher—Henry Schuman is a lifelong student of science, who brought out the remarkable "Life of Science" books—on realizing this and signing him up for this series.

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LIVING MAGIC, by Ronald Rose.  
Rand McNally & Co., New York.  
1956. 240 pp. \$3.75

Ronald Rose and his wife went to live among the Australian aborigines as what might be called para-normal anthropologists. Their purpose was to look for evidence that the aboriginal spirit-doctors or "clever-men"

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were making conscious, controlled use of the faculties—telepathy, clairvoyance, psychokinesis—whose uncontrolled and seemingly uncontrollable presence elsewhere has been attested by experiments in parapsychology.

This fascinating account of their experiences among the still fairly "wild" Pitjendadjara on the back country, and later with the partly acculturated Aranda, contributes only a modicum of evidence to show that the aborigines have unusual psychic powers. A few did very well with Rhine cards; nobody could do much with PK, although one of the alleged powers of the clever-men is teleportation. What they do reveal is a deeply rooted and culturally very important body of *beliefs* in certain kinds of magic, some fairly good evidence that the magic-makers are adept at hypnotism, and any amount of anecdotal indication of telepathy.

If there are Martians, we will probably find them living in some such marginal hand-to-mouth symbiosis with their world as the native Australians had worked out with their desert wilderness. And if we colonize, the eventual picture is likely to be very like what the Roses show here: one tremendously old cultural adjustment breaking up, without being replaced by another. The old values, the special skills, the whole psychic pattern of the aboriginal culture will be churned up, an attempt made to pour the resulting mess into a mold which fits our own society, and the result will be tragic.

On the other hand, if the tenets of science fiction are sound and the Martians are immensely superior to us, then here we may one day see ourselves.

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ROCKETS TO NOWHERE, by Philip St. John

TROUBLE ON TITAN, by Alan E. Nourse

SECRET OF THE MARTIAN MOONS, by Donald A. Wollheim

THE ANT MEN, by Eric North.  
John C. Winston Co., Philadelphia and Toronto. \$2.00

This is an attempt to catch up on the Winston series of science-fiction originals for teen-agers, which I haven't been getting lately. Fewer are being published—I have two more to go, to catch up to date as of October '56—and the average quality is down.

Best of this lot is "Philip St. John's" "Rockets to Nowhere." The same author's previous "Rocket Jockey" in the same series was a Junior Literary Guild selection, and this book has the same quiet realism in its story of a time in the near future when some of the world's top scientists and rocket pilots begin to disappear. Danny Cross, born and brought up at Alamogordo, sets out to do his own detecting in hot competition with the authorities, and of course comes out on top.

Alan Nourse, familiar in these pages before he dug into a practice out in the Northwest, has a bang-up

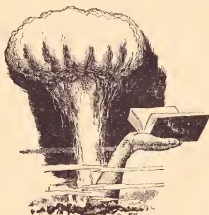
action story in "Trouble on Titan," with some very clever scientific verisimilitude and a plot that grows out of the conditions on Titan. If the bullheadedness of the fathers of the two young heroes seems a little forced, it's necessary to allow the good will of a couple of teeners to find the right way out and achieve a solution that saves everybody's face. Maybe this man Nourse belongs in the State Department.

With Donald Wollheim's "Secret of the Martian Moons" we go back twenty or thirty years to the time when this kind of thing was standard fare in most magazines. In more than a century Mars colonists have been unable to as much as open the clothes closets of the Martians who just up and walked away, leaving their planet like a cosmic *Marie Celeste*. Earth is tired of paying the bill, and calls them all home—all but a few who hide out, sure that the Martians are right behind that

bush and will come out as soon as the coast is clear. And sure enough, someone does come—with space-war right behind. It's a nice enough situation, but never becomes believable.

"The Ant Men" is even older hat, and by all odds the worst book Winston has published in this series. If "Eric North" is really Andre Norton, I am completely at a loss to know what happened to her usual good taste and good writing. The Australian back-country setting may be authentic, but the science becomes completely fantastic—I'll swallow the giant "human" ants, in spite of the square-cube law, because it is nowhere stated that their respiratory systems haven't changed just as much as the rest of them—and it is a kind of relief when the whole thing seems to wind up as a dream. I dunno what you want to call it, but it's not science fiction—not by a generation, at least!

THE END





## BRASS TACKS

Dear Mr. Campbell:

Just read P. Schuyler Miller's review of "The Invasion of the Body Snatchers," a picture produced by Walter Wanger, and feel impelled to take exception to his remarks. Let me hasten to add that I had no connection whatever with this picture.

I am afraid Mr. Miller missed the entire point of the picture. On the surface it seems to be a thriller dealing with "pod people" who invade a small town, and gradually assume the form of the inhabitants, as well as their minds and personalities. A young doctor resists the pods, and after great physical and mental suffering, finally manages to escape.

But that isn't what the picture is about at all.

What the picture is *really* about is the growing tendency in this

country toward conformity in thought and action. The pod people all have the same ideas. They think and act and talk alike. It is so easy to become a pod (to conform); don't fight against the mass mind or you will get into trouble. Be content with the mediocre and ordinary.

"Invasion of the Body Snatchers" has a quality seldom found in motion pictures—it is subtle. It is to Walter Wanger's eternal credit that he did not try to underline his points. After reading the review in *Astounding* and the one written for the Parent Teachers Association, I am wondering if he should not have come out with everything plainly labeled.—Robert S. Richardson.

*Thanks! Correction gratefully noted.*

To: Isaac Asimov  
Via: John W. Campbell, Jr.  
Subject: Eggs, Golden, the goose  
that lays the

The problem posed in the recent issue of *Astounding* has a simple solution. Send the Goose to Russia.

Do not be alarmed. I am not suggesting treason. A detail analysis of the subtleties and devious results which will follow shows clearly that this will work to the advantage of the United States and the free world. Even allowing for any number of eventualities, the result is inevitably in our favor.

For instance, the Goose as it is now, is going to frustrate the best biochemists in the country. This is obvious, since the problem of whether to cut her open or not is patently insoluble. Presented with such an insoluble problem no mind can keep from going mad. So we lose the services of these estimable biochemists—all biochemists are estimable—for solving such problems as how to cure cancer and whether diphenotrychlorobromomethyl perhexadaze enters into the reaction in the alpha—or beta-phase in preventing space sickness.

Since we know that whoever works on the problem will go mad, let's send it to Russia. Simple.

To hasten the process let's make it seem that there is a deadline; that they have to find out about the Goose quickly or they will be licked. So we plant a fountain pen in our government and put him in touch with a nice reliable Russian

spy.\* He leaks the proper misinformation to the spy who is allowed to steal the Goose. With it, tied to its leg he gets a label, something like:

Special Weapons Battalion  
Fifth Infantry Division  
#GG 9712

Type B 1½ Megaton/Pound

Any fool, including Russians will be led to believe that we have many of these, and that somehow we have found a way to unbalance the atomic reactions so that it blows up. With this information in their hands they cannot help but feel that we are way ahead of them in weapons development. It will help in the deception if the Army secretly buys a few thousand geese and openly displays them at a few carefully selected military posts around the country. Maybe we should even cook up some dummy shipments from these posts to Fort Knox.

Shortly before or after the Goose gets to Russia, we ought to have one of our people defect into Russian territory, someone who can help the Russians work on the problem. I leave it to the government to figure out whether it is easier to train a spy in biochemistry or to train a biochemist in spying. They're smart at that sort of thing.

This spy will keep track of the work and nudge the researchers over the top into madness at propitious times.

We will thus also be covered just

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\*A fountain pen may be defined as a controlled break—ED.

in case somebody over there should stumble on something. Suppose they do find out how to breed geese that lay golden eggs? Our spy simply blows up everyone who knows anything about it and comes back with the information. Either way we win—whether they go mad or work it out for us.

But the beauty of it is that he doesn't have to be successful in blowing up the Russian scientists. We win anyway. If he can't blow things up, he just leaks the thing all over Russia. Can you imagine what such a source of gold is going to do to Russian economy? Once they find they have enough Geese they will see the advantages of abandoning communism in favor of capitalism, so we don't have to fight after all.

As I said before, this is fool-proof. We can't lose.

I think to clinch the case you ought to publish this letter. The Russians lie so much they can't conceive that anyone tells the truth so they will automatically refuse to believe that we would actually do what we say we're going to do.—Willis Williams.

*Well—that solves what to do with  
The Goose, even if it doesn't  
solve the problem of The Goose!*

—

Dear Mr. Campbell:

It seems to me that in your December editorial you have handled

both psychology and logic rather roughly and unfairly.

Humanic problems can, certainly, be subjected to a rigorous analysis, but only by one who knows *all* relevant facts can cause-effect systems be determined. The more facts known, the nearer to correctness a science may, in general, approach; which is the only reason why physics and chemistry are called "exact" sciences. That is, more facts are known, more (relevant) conditions have been measured, in these sciences than in psychology—and for a very good reason, too. Psychology today may be likened to science in the pre-Galilean period: many falsities concerning human actions are still deeply ingrained in our theology and belief—so deeply that even the psychologists often block themselves off to avoid realizing them.

But assuming the existence of psychological exactness, you deduce a thought-controlled state, which in no way follows. "Do you prefer freedom to have your own opinion . . ." you ask. But this question is meaningless: such "freedom" does not exist now and never has. The only consequence which could arise from an exact psychology is that a good deal more of us would realize that highly unpalatable fact (not all of us, as you say, but only those who were *prepared* to, would realize this and accept it). There is no such thing as the "right to one's own opinions"—only the fact that, as long as *all* facts are not universally known and accepted, people will



have different interpretations of those they know or think they know.

Logic, too, is less given to vagueness than you would have us believe. T(of November 20, 1956—at November 20, 1956) is not-"real"; T(of November 19, 1956—at November 20, 1956) is "real"; T(of November 18, 1956—at November 20, 1956) is not-"real"; though all these statements imply a certain definition of reality. Granted "F is neither true nor not-true"—so what? F is not a statement—why should anyone want to discuss its truth value? And the dominance of "predictions of the future" in determining a man's actions as illusory: past and present conditions determine his prediction of the future.

The example of the voyeur is not quite relevant, but extremely interesting nevertheless. The fact is that such an unlikely action would be followed (probably) by an objectively ridiculous conclusion: the voyeur would be convicted of rape (under the definition of forcing intercourse on a woman against her will) while the kids would be (against their will, perhaps) married! Actually any "responsibility" for the action, or for any action, falls on the highest power admitted, which power is responsible (if any is) for all actions of its members. If society claims the power to judge, all its judgments must at last bear upon itself. In this case, admitting no further cause, society would have created the neurotic; his neurosis caused his threat, which caused the event (note

the logical as well as legal relation—a threat or "duress" did exist, and can enter a logical sequence). So in your sarcasm you are right: the voyeur is *not* responsible.—Donald S. Bush, Harvard College, Cambridge 38, Massachusetts.

*Your comments are entirely logical—which means that the method of analysis used is necessary, but not sufficient to the task at hand. If "all" the data must be available to reach a conclusion by logical means—and you're correct in saying that is true—then no conclusion can ever be reached by logic that relates to the real world. Reason: You can never have all the data about anything in the real universe. Logic, consequently, works only in a universe of discourse where "all" the data is determined by definition.*

*How much data is enough? The strict logician says "all," which is futile in any reality problem. The more powerful the method of data-manipulation, the less data is required. A simple example: without Newton's Laws, astrologers worked out the positions of the planets by a near-infinite set of observations. With Newton's Laws, astronomers need only three observations to determine a planet's future position. The more powerful analytical tool can extract more meaning from three items of data than the older method could from tens of thousands.*

Dear Mr. Campbell:

Earlier this year I sent you a letter about a story called "Clerical Error"; in this letter instead of opposing something in your magazine I would rather like to express my very great agreement with something you stated in the Editorial.

Paraphrasing very freely your statement was;

current action = past experience + current situation + prior prediction of the future

I wholeheartedly support this statement and believe that it represents both a very essential difference between the most advanced machines and human beings and also explains why human beings do not act logically in terms of Aristotelian logic.

In my own field of being a methods man with IBM machines I have found that all of my problems lie in the area of dealing with people none in the area of dealing with machines. And the machines can be made to do some marvelous things:

Example A: D of document #1

(IBM Card #1)

compared with D of document #2

(IBM Card #2)

If comparison is equal no total is taken

If comparison is unequal a total is taken

(In which D is a numeric number of a given size in a given location)

Example B: E of document #1

(If E contains a number)

or F of document #1

(If E does not contain a number)

compared with E of document #2

(If E contains a number)

or F of document #2

(If E does not contain a number)

If comparison is equal no total is taken

If comparison is unequal a total is taken

(In which E and F are fixed but different locations of numeric nos.)

The examples can grow increasingly more complex but the fundamentals are the same: An IBM machine can read information, store information, and print or punch information—but always in direct accordance with Aristotelian logic. IBM machines and their like can remember the past, understand the present and on that basis predict the future.

In the same position a human being can remember the past, understand the present and form a prediction of the future on the basis of which he takes action which effects the future.

If you say that the most important function of intelligence is to act in such a way as to build the future you want—then the second most important function of intelligence is to predict.

Why is it that Aristotelian logic does not cover the case of human action? Because human action is always conditioned by the previous actions, beliefs and believed future

actions of other human beings as well.

If such a matrix of action and reaction could be broken down into sufficiently small pieces then it is possible that each piece would be Aristotelian in nature. But as a whole it does not show the characteristics of the double reason of (1) the multiple interreaction of different people and their attitudes, and (2) the effects of motivation (or emotion) in human beings.

To exemplify, from my own experience, the emotional difference between machine and man, I can cite as a typical example my first attempt to use a 602A. This machine calculates numbers in a card against one another on a highly flexible basis. It achieves its results by taking a series of steps that are started by reading the card and ended by a wire in the control panel—my first control panel, on this machine, was lacking this end wire. As a result the first card fed into the machine and the series of steps began. They would still be going on today four years later if I had not stopped the machine.

The point of this paragraph is that a machine does not care. Since only the people operating the machine care theirs is the responsibility for any error the machine may create.

It is my opinion that Aristotelian logic does not apply to human beings because human beings are already acting on the basis of multi-valued logic which includes both the factors represented by all of the

people around us and the factors represented by emotion.

Further, the problem represented by a person such as myself, who is slightly neurotic, is best cleared up by the realization that everybody else in this world is filled with much the same desires that I have and that to achieve what I wish I must grant to them as much freedom as I myself desire and to treat all incompatible differences with diplomacy rather than belligerence.—Clark Brennan, 139-85 86th Avenue, Jamaica, New York.

*Problems: 1. "Freedom" differs from "license" in being limited. Find the limits of "Freedom"!*

*2. Logic is necessary in human beings, as well as in machines—but not sufficient to describe human behavior. What, then, is sufficient?*

---

Dear Editor:

In your editorial in the September issue of *Astounding* you mention the case of a certain graph which was accepted by scientists for many years before it was found to be inaccurate, and you deprecate, rightly, the excessive trust in published data which leads to such happenings. It is a pity, therefore, that in the same issue, on page 102, you help to perpetuate the story about the abacus being superior to an electric calculating machine.

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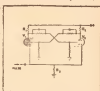
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chine was held in Japan in November of 1946, and an account of the various reports that were put out about it can be found in the November-December 1954 issue (Vol. 28, No. 2) of *Mathematics Magazine*. However, in the September-October 1955 issue (Vol. 29, No. 1) of the same magazine, there appeared a letter by Major A. M. Maish which makes it quite clear what really happened on that occasion. Major Maish provided the machine for the contest, but not the operator; the operator was a substitute, and was both incompetent and slow. In setting up the numbers for example, he set up one digit at a time, and he checked and rechecked everything. In the words of Major Maish, "I think anyone in the audience, children included, could have bettered the corporal's performance if given one hour's instruction."

It is hardly necessary to say more. It is not surprising that a skilled operator of an abacus should be able to beat an unskilled operator of a calculating machine; but, given skilled operators in both cases, the machine will win hands down, as anyone who is familiar with calculating machines and the abacus will tell you.

This particular myth has been going the rounds for ten years now, which is quite long enough. Astounding does a good job with speculations about the future, how about helping to kill this inaccuracy about the past?—Ronald C. Read, Dept. of Mathematics, University

College of the West Indies, Mona, St. Andrew, Jamaica, B.W.I.

*Thanks for the correction information; I'd never gotten—though I always suspected—the information. However, my use of the item was simply to point out that an abacus is a device useful to a human being doing arithmetic, yet does not, itself, have any "machine" function. On the other hand, there was the Hindu girl who demonstrated ability to do purely mental arithmetic at a rate no machine-and-operator could approach!*

---

Dear Mr. Campbell:

I built the Hieronymus machine as described in June Astounding Science Fiction. I used lead for the baffle, insulated from the chassis by a strip of plastic. I used No. 22 copper wire for the electrodes and the slit was the same size. I mounted the movable electrode on a six-inch wheel.

The sensation I get is of a depression in the plate above the paper disk which the spiral coil is wound around. This is very faint however. I wish to report the following data as I have found it:

1. One subject described the sensation as a warm feeling and also that it felt like there was a spring under the plate.
2. For different materials the sensation is felt at different positions of the electrode. Three materials

were tried—lead, copper and silver.

3. The sensation could be felt through one centimeter of movement of the electrode. It would begin weak, reach a peak and become weak again as the electrode was moved.
4. The variable capacitor of the pickup circuit was varied with each material, but only with copper was any difference noticed. When the capacitance was decreased, the sensation became stronger.

I haven't tried a photograph yet but intend to do so soon. I have not tried a mirror behind the electrode or any other modifications or alterations yet because I wanted to find out all I could about it as it is. I am going to make some alterations and modifications now and see what I can learn. The machine works most of the time but sometimes it doesn't, why? I don't know.

I would like to see some more articles on PSI machines. How about one that seems to demonstrate that a part of a thing is equal to the whole?

I happen to be from Missouri by the way, though I don't believe every crackpot story or idea that comes along I'm willing to investigate almost anything because I want to see for myself—Raymond Price, Jr., 2222 Sawtelle Boulevard, W. Los Angeles, California.

*Data reports needed! Any other experimenters with data to add?*

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(Continued from page 7)

that he was already established as a first-line, top-rank physicist. He was vilified, accused of collaboration with "that charlatan," and angrily attacked for supporting what everyone knew perfectly well was a fraud. That is . . . everyone who had *not* gone near Home knew it.

Thirty years later, having survived the powerful attacks launched against him by reason of sheer brilliance and ability, Sir William stated as his considered opinion that, even thirty years later, he was still fully sure that his experimental investigation of Home and his talents had been sound and the conclusions fully warranted.

But today, everybody knows that psi talents have never been demonstrated under fully controlled laboratory conditions before competent scientists. The culture says so, doesn't it? Ever know a bigot to change his opinion by reason of mere evidence to the contrary?

Beginning about 1900, and continuing through 1944, Edgar Cayce\* was available for study. Edgar Cayce had psi powers, and used them publicly, for medical diagnostic work, for four decades. Over fifteen

thousand individual cases were recorded. Cayce was not an intellectual giant, not a genius capable of creating a whole new cosmological theory. He didn't have that peculiar intellectual talent that made Einstein what he was; he had a different type of mental talent. He was certainly clairvoyant *in extremis*; the evidence for that was overwhelming. There's some evidence of precognition—including one arrest for fortune-telling—and some pretty shaky indications that he could levitate. But the evidence for two remarkable powers is overwhelming: he had clairvoyance, and he had the power to gather information from other minds.

Specifically, Edgar Cayce, in response to a request for help, could go into auto-trance, and, while in trance, dictate a precise description of the precise cause of a medical condition, of a specifically named individual. The individual could be anywhere on Earth; Cayce could describe the individual, his surroundings, and the disease condition. He would then indicate the underlying cause of the disease condition, and prescribe a detailed and highly precise course of treatment. Edgar Cayce had had no medical education—grade school education, at best, and that in the back hills country—and was, professionally, simply a pretty fair commercial photographer. But in trance, his medical information was utterly fantastic in its extent and insight. His prescriptions varied from drugs to physical ther-

---

\*There are a number of accounts of Edgar Cayce's work—all poorly publicized. Currently available as a pocket book is "Edgar Cayce, Mystery Man of Miracles," by Joseph Millard. 35¢ as a Gold Medal book, available from Fawcett Publications, New York City. There are a number of others, some available in larger libraries. Further data on Cayce can be obtained from the Edgar Cayce Foundation, Inc., of Virginia Beach, Virginia.

apy to surgery and back. His clairvoyant diagnoses were utterly precise, and were checked, again and again and again, by more orthodox diagnostic techniques. His prescriptions were, many times, startlingly original—but they were, also, effective.

As an example, he once, in trance, prescribed for an exceedingly sick baby, a lethal overdose of belladonna, combined with an equally potent antidote for the poison. The baby was cured. Such a combination of antagonistic medicaments would not be considered by an orthodox doctor—but medicine might have learned something from some of Cayce's highly unorthodox, but effective prescriptions.

Suppose we have a drug A, which has two effects,  $a'$  and  $a''$ , such that  $a''$  is a second-order effect, and becomes usefully marked only in large doses of A—but the primary effect,  $a'$ , has then reached such magnitude as to be lethal. By combining A with a second substance, B, which has the effect of negating the primary effect  $a'$  of A—the secondary effect,  $a''$  would become available and usable. Normally,  $a''$  could not even be detected, of course.

Understandably, the medical profession didn't approve of Cayce; what he was doing was decidedly questionable under the laws. It is, of course, illegal for anyone not a doctor to diagnose and prescribe for patients. (Again, notice that it isn't a question of correctness; truth or validity is no defense. The fact that

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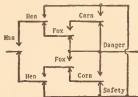
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Cayce's prescriptions worked, that his diagnoses were accurate, have nothing to do with the legality of the situation.) That problem is, however, beside the point under discussion—the question of existence or nonexistence of psi powers.

Cayce—again let me point out he never claimed to be an intellectual genius of the Einstein order—reported, in trance, that he had the power to gather information from the subliminal mind of anyone anywhere who had the information needed to solve a problem. Apparently, one of his psi powers was that of being able to use the memories of all human beings as most men can use the "memory storage" of a great library. Right handy of course, for someone who had a problem to solve—naturally, a man with the information available to every man everywhere, would be able to solve problems that no man anywhere could solve. His explanation of how he did what he did may well be completely wrong; the subjective facts aren't determinable.

The objective facts are. He handled, in the forty years or so he worked, some fifteen thousand cases of record. Naturally, he was investigated repeatedly. Scientist after scientist launched an attack to prove this charlatan the fraud he was—and reported back that he was absolutely genuine. The medical profession, understandably, really launched a full-blast attack—and a few reports of his established abilities, with documented proof of the

validity thereof, did appear. At no time did anyone anywhere prove him a fraud. Edgar Cayce had it, and had it good.

Every man who tried to help him, however, was ruined. The scientists who investigated and reported the absolute validity of his work suffered precisely the sort of attack Sir William Crooks did. Not being of Crooks' enormous stature, they were broken by the attacks, without accomplishing anything. Crooks didn't accomplish anything, but he was too great a man to be broken, even by the concerted bigoted pressure of the culture.

It is repeatedly stated that if one good, solid demonstration of reliable, repeatable psionic powers could be made, the fact would be freely accepted.

That is false. It is the statement of a bigot; he, too, will say that if anyone can show him one "satisfactory" example he'll admit he's wrong. Trouble is, for a bigot no contravening evidence can possibly be satisfactory, of course. And any evidence, however tortuous, that indicates any possible escape from an unwanted fact, is preferred.

What would be a "satisfactory" demonstration? Commercial success? But commercial success is impossible, when the laws of the culture are bigoted and prejudiced! Suppose I had the power of precognition, and could forecast correctly 95% of the time. (Not 100%; that would mean there was 0.00% free will in this

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universe.) Could I establish a commercially successful enterprise?

No, of course not. I'd be arrested for violating the laws against fortune-telling. Use it to win at the horse races? Not and stay alive very long; it's all right for a man to have luck—but when he shows a system that works, he's ruining the game. Somebody will see to it the game is protected.

*The culture itself is bigoted.*

The failure of anyone to "satisfactorily demonstrate" psi powers is caused by the failure of the culture to accept any evidence of psi powers. The fact that no "satisfactory demonstration" of psi powers has been accepted is then cited as proof that there are no psi powers.

I've quoted only two heavily-documented cases. There are, of course, scores of completely documented cases, but . . . look, I wonder how a brain cell in a bigot's skull feels? How does it feel to be a member of a society which is not permitted to consider a fact? Publicity is denied the pro side, while the con side is given every opportu-

nity to spread its rumors and half-truths. Houdini, using extraordinary physical powers developed by a lifetime of training achieves, by some brilliant feat of manipulation, an effect that some psychic has produced. The medium, however, happens to be a feeble seventy-five year old great-grandmother. But Houdini's feat of physical prowess is "proof" that that was how she accomplished the result.

She could make more money selling the secret of her incredible and incredibly long-lived agility.

But the prejudices of our culture are soothed by the exceedingly improbable idea that the septuagenarian can match the great Houdini for agility, and violently ruffled by the idea that the anathematized psi powers could exist. The performance is perfectly familiar as the normal behavior pattern of any bigot.

What, then, would be "satisfactory" evidence of psi powers? The individual who has demonstrated the powers is denied; he is, after all, just a statistical anomaly, of no significance, and probably not true anyway. Good, sound, repeatable,

statistical evidence of the phenomenon as a repeatable experiment is needed.

Dr. Rhine has been doing repeatable laboratory experiments for a time not quite as long as Cayce was doing his repeated experiments. Rhine has good, sound, repeatable statistical evidence. But his statistics have been questioned—by non-mathematicians, of course. The professional mathematicians have examined the statistical methods and certified them as sound. The applicability of the theories of statistics have been questioned. And it's been said that if Rhine could produce just one individual who could really demonstrate repeatable, solid psi performance of any kind, the evidence could be accepted.

Cayce was such an individual; he repeated his performance under full controls for forty years.

What kind of a demonstration is wanted, then?

The answer is, of course, easy. No bigot ever wants any kind of demonstration that his prejudice is erroneous. No matter what evidence you present, he'll have a reason why *that* evidence isn't valid.

What can be done when the culture itself insists on punishing anyone who presents the evidence in positive form?

I don't know whether Dunninger can read minds or not; Cayce would not have been the failure he was if he had only been willing to put on a phony turban and go on the stage where the culture could have heaved

a sigh of relief, and said, "Well, of course, he's just *pretending* to have psi powers! Everybody knows it's just a trick—and that's *such* a relief. For a while, I was afraid he really had it."

Dunninger is fully acceptable; he's pretending that he's pretending to have psi powers, maybe? It's perfectly acceptable—if we don't *have* to believe it's true.

Wonder if the fanatic prejudice stems from the concepts of democracy, wherein it is intolerable that there could exist a real human power, possessed by some, and inherently non-learnable? Something that no one could even kid himself into believing that he, too, could have learned if he'd just wanted to take the trouble to do that sort of thing.

Einstein? Ah, sure, so what? I coulda done the same thing, if I'd wanted to, I betcha. He was an old crackpot, though—who wants to spend his time doin' that sorta stuff, huh? Guy's gotta be a nut to spend all that time readin' books, and never goin' out no place. Besides, didn' he say himself he wished he'd been a plumber?

That millionaire? Ah, so what? Ulcers he's got, I bet. He can have it. Who wants to live that way? Sure he goes all over—but what fun does he have? Nuts to that.

In a democracy, anyone is welcome to anything I don't want. But not to something I do want—and can't get. That sort of thing *must* not exist!

THE EDITOR.

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